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AMERICAN VETERINARY REVIEW.

SEPTEMBER, 1906.

Correspondents will please note the change in address of Dr. Roscoe R. Bell, from Seventh Avenue and Union Street, to 710 East Second Street, Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, July 15, 1906.

THE UNVEILING OF THE MONUMENT TO NOCARD.—I was enabled in my "Chronicles" for August to present to our readers the outlines of the ceremonies attendant upon this important occasion, together with a fairly good photographic reproduction of the monument erected in commemoration of the great work of the lamented Edmond Nocard by the veterinarians of the world. When the cloth that covered the monument fell down, a closely resembling bust of Nocard appeared, mounted on a superbly polished granite pedestal three metres high. At the foot of it there is an allegorical group, presenting in the centre a woman, symbolizing Science, and registering the discoveries of the Master; on the right a country girl glances to Nocard with an appealing eye, while on the left a young shepherd presents him with a palm. Immediately below the bust a gilded inscription reads:

TO EDMOND NOCARD
1850—1903
HIS COLLEAGUES, HIS STUDENTS, HIS FRIENDS

As I have said, several speeches were delivered, and among the principal parts of the numerous eulogistic remarks that were made there were those pronounced by the Secretary of Agriculture, who very properly closed his speech by saying: "By his contributions to the study of contagious diseases, which he carried out with the most rigid experimental methods, Nocard has thrown a powerful light upon a profession too long unappreciated. Follower of Bouley, of Chauveau, who are with him in the glories of veterinary science, he succeeded, as Pasteur did, in relieving human sufferings. His work was the kind which classes a man among the great Masters, and among the benefactors of humanity."

And now the statues of three illustrious men are in the *Cour d'honneur* of Alfort: Bourgelat, Bouley, Nocard. Three great men marking three stages in the history of veterinary medicine. Bourgelat, its youth, with its obscurity and difficulties in developing; Bouley, perhaps its apogee, with its great practical clinical applications; Nocard, the full and vigorous state, not yet entirely developed, but advancing, progressing, and entering firmly into the paths of the glorious and scientific usefulness to which veterinary science will not fail to reach.

* * *

FRENCH HORSE SHOWS.—There have recently been three events here which show that if France is the country of automobiles, the horse is far from being killed off and the race from disappearing.

After the admirable exhibition of the *Concours hippique*, which corresponds to our American horse show, and where many prizes of value were fought for and distributed to superior specimens of horses, superior in their qualities, in their forms, and, above all, in their abilities to perform special work,—after this concours, we had the *Congrès hippique*, where important subjects relating to the breeding and raising of horses were considered and discussed before an assembly of about six hundred breeders from all parts of the country. Among the papers read was one from Mr. Lavalard, honorary member of our national

association, the A. V. M. A. (who, by the way, has just informed me that he has at last received his certificate of honorary membership). It would have been a great treat for any American horseman, breeder, or veterinarian, to hear Mr. L. so loudly speak of the qualities of the American horse, of the manner in which he is raised and of the care that Americans bring to bear in the selection of their stock for breeding purposes and the making up of their stud-books.

* * *

The third event of the season has been the *Concours central* —in other words, another show for the stud animals (horses and asses). This was most important. Organized under the auspices of the Secretary of Agriculture, it brought together the finest specimens of the equine race in this country. There were nearly one thousand animals entered, and among them were: English, Arab, Anglo-Arab thoroughbreds, and then came in greater number the half-bred horses: Arabs trotters, Anglo-Normans, Normans, Vendeans, and Charentais, etc. The "postiers," the draught-horses, represented by the Ardennais, the Boulonnais, the Bretons, Nivernais, and Percherons. An important section of the show was devoted to mules and asses, and quite a number of animals belonging to this class were the objects of interesting examinations. Ugly as these subjects appear to the layman with their long ears, rough, matted coats and their peculiar aspects, they nevertheless drew considerable attention, which can be appreciated when one takes into consideration the fact that mule-raising is quite important in some parts of France.

* * *

The National Veterinary Congress.—And finally we had this event, of which I have already said a few words in my "Chronicles" for June. The Vth National (or Nocard's) Congress, as it is to be known, is peculiar, resembling somewhat our association, in that every veterinarian can be a member; it differs from it in that the membership ceases with the close of the work of the Congress. At the meeting, therefore, are seen

private practitioners, and then delegates of the various societies and of many of the professional syndicates that exist here. This year the attendance was quite large; no doubt the ceremony of unveiling the monument to Nocard brought many, while the banquet which closes the meeting, was an attraction for some.

The work of this gathering, however, differs from that of our organization. There is no reading of papers, no clinics, no excursions, no program of distraction—only solid work and stern discussion. The subjects have been placed in divisions by a committee; they cover points essential to the profession at large; they interest veterinarians only; and of course, ladies are not found at the meetings, as they were at St. Louis, Cleveland, etc. As an evidence of what might sometimes be considered by outsiders as dry subjects, the Vth National Congress treated in the five days it lasted: (1) of the central and departmental organizations of the veterinary service; (2) of the breeding of horses and organization of haras; (3) of the reform of veterinary education; (4) of the general organization of meat inspection, and (5) of the control of milk production.

* * *

I do not think the discussions on these various subjects can have much interest for our American friends, with the exception of the third—the reform of veterinary education. I have already mentioned the demands made by the chairman of the committee which reported on this subject; permit me to give the conclusions that were adopted. A comparison will prove interesting.

Resolutions adopted.—(1) That in the shortest time possible, external students shall be obligatory in all veterinary schools; (2) that besides the degree of bachelor demanded of candidates for admission in veterinary schools, knowledge in chemistry, physics, and natural history be required; (3) that the title of doctor of veterinary medicine be granted; (4) finally that important changes should be made with the object of modifying, improving and insuring the recruiting of the teaching body of veteri-

nary schools with the means to improve their conditions; that in the shortest time possible reforms in education be established so as to bring out not only superior practitioners, but also specialists in sanitary police, hygiene, inspection of meat, etc., or of any simliar work of an administrative nature.

How many of these propositions and votes will be realized is another question.

* * *

VETERINARY EDUCATION.—While I am considering the subject of education, I must relate part of a report made on the subject by the professors of the University of Rome, in Italy, and which I find taken from the *Goirnale della Reale Societa* by the *Revue Generale.* It covers three points:

(1) *Insufficiency of the fundamental instruction for admission in veterinary schools.*—Baccalaureate ought to be required. It is a moral necessity to raise the standard of the profession. If it is not demanded the public will believe that the study of veterinary science is trifling.

(2) *Insufficiency of the teaching of hygiene and zoötechny.*—They must be taught minutely. Hygiene to include etiology, chemical, physical and bacteriological analysis of air, water, soil, disinfections, vaccinations. It belongs partly to general patholcgy and to pathological anatomy. Zoötechny demands also a special scientific preparation. It requires a teaching essentially practical and cannot be taught with plates, no more than obstetrics.

(3) *Insufficiency of teaching by bovine clinics.*—Well regulated clinics, inspection made out of the schools, ought to be organized in all the schools.

I hope these movements occurring in the old veterinary schools of Europe may prove valuable suggestions in America, where schools do not yet have to fight the routine of years to realize the improvements they are so much in need of.

* * *

AMERICAN MEAT SCANDALS AND THE FRENCH PRESS.—As can be easily imagined, the scandal that has been raised in relation to the work of the meat packing establishments has at last

found its echo in the journals here. Of course, the interest is not as great as in other countries, the use of preserved meat being almost unknown in France. Nevertheless, the subject has found place in our daily and a few of the scientific papers. The opinions and the remarks vary, but I must confess that many are rather unfavorable to the packers. Why? I am sure their authors would be embarrassed to tell. I have just seen the following in a good and sound agricultural paper. How can a sensible man give hospitality to such absurdity? I translate the article:

"An official inquest has revealed frightful facts, which are of daily occurrence in the great factories of preserves in Chicago. In those, pigs that had died of hog cholera are used and their fat employed for the fabrication of oil for conserves of sardines; hams in putrefaction have been made inodorous with chemical preparations; other similar compounds have been used to color bad meats; sheep that have died from disease are also employed; sausages are made from scraps sprinkled with chemical substances to give them taste; tuberculous meat is used; and, finally, a fact still more horrid, it is said that workingmen having been caught in the wheels of the machinery, the work was still kept up, and crushed human meat was mixed up in the making of sausages, in the preparation of the preserves."

Can ignorance excuse such absurdities? and how can the people of Europe be made to understand that the Bureau of Animal Industry, that the sanitary inspection of meat and of the various industries related to it, are organized in the United States as no one in Europe is, and that the frightful stories related are silly and untrue.

* * *

IMMUNIZATION AGAINST TUBERCULOSIS is always the question of the day, many are the experiments that are made, and society meetings hear of the results that are obtained. At one of the last gatherings of the Société de Médecine Vétérinaire Pratique, Prof. Vallée made an important communication. After relating briefly how he had made known a process by

which hypervaccination of horses with tuberculous bacilli of human origin and strongly virulent was obtained, he stated that he was now studying the qualities of the serum of these horses, and was searching to find out if these qualities were not more marked, to the therapeutic point of view, than those of the serum of bovines hyperimmunized with the method of Behring, which in fact almost do not exist. He then presented to the society the cadavers of guinea-pig, inoculated with human tuberculosis and then treated with the serum of the horses submitted to repeated inoculations of human tuberculous bacilli. Although the action of the serum was imperfect, in that it did not arrest entirely the development of tuberculosis, it is nevertheless more than evident. The serum certainly interferes with the morbid process. With calves the action is still more manifest. An animal infected by venous injection, then treated with weekly inoculations of serum, shows a very encouraging result. While the witnesses die with generalized tuberculosis, in 30 or 40 days, the animals treated have no thermic reaction and at post-mortem exhibit only trifling lesions, when compared with those of the witnesses.

Prof. Vallée believes that to be more effective the anti-bacillar serum ought to be injected with an anti-toxic serum, obtained from horses treated with successive inoculations of tuberculous bacilli, killed by a special process, which he will describe later, and which, besides the rapid absorption of these bacilli, insures also the conservation of the toxin that they contain. These same bacilli can be used for the quick vaccination of young animals, thus avoiding the possibilities of contamination of the subjects which are kept in infected localities, a condition which cannot be avoided with the methods of vaccination already known.

* * *

The Director of the Pasteur Institute at Lille, Dr. Calmette, recently made a communication on the subject of vaccination against tuberculosis, when he recorded that while continuing his investigations upon the intestinal origin of pulmonary

tuberculosis, he had observed that young calves, which were made to take in two meals, forty-five days apart, a small quantity of tuberculous bacilli, attenuated or altered by heat, became perfectly vaccinated against virulent tuberculosis infection by the digestive tract. Vaccinating bacilli, like the virulent, pass through the intestinal mucous membrane and are stopped and destroyed by the lymphatic glands. Therefore, young bovines can be vaccinated by a method that is absolutely harmless, much more simple, and in all truth as efficacious as that of Behring, which has not yet entered into general practice, notwithstanding all the booming it has received.

Dr. Calmette goes so far as to say that he thinks this method could be applied to mankind. Children should be protected from a natural tuberculous infection by receiving, a few days after birth, and a short time afterwards, a small quantity of tuberculous bacilli of human or bovine origin, in which the virulence would have been attenuated by heat. But a condition for success is essential: that they should for four months after be kept away from any tuberculous contamination.

After all, this is but a step forward among the numerous questions relating to vaccination against tuberculosis.

* * *

ERRATUM.—August REVIEW, page 526, last line but one, "*eye*" should read "*age.*" A. L.

THE NEW HAVEN MEETING OF THE A. V. M. A.

The record of the 43d annual meeting of the American Veterinary Medical Association is all that is left of the great event which we have been anticipating with so much pleasure for many months, and a splendid record it is! Elsewhere in this number will be found a concise summary of the chief events of the session, but those who were absent must forever be great losers through their failure to be active factors in the proceedings.

All things conspired to make the meeting a glorious season of profit and pleasure, except the weather, which was humidly

hot. Everything else was right: attendance the largest ever, 374; literary program overflowing; clinic best in our history; discussion intensely valuable and spirited; work along educational lines encouraging, and all interspersed with the most fascinating diversions, which were enjoyed in the company of the largest number of ladies who have ever graced our delightful annual event.

We have neither the space nor the time at our command to analyze the various factors which conspired to make this meeting superior to all of its predecessors, but as an example of the character of the work accomplished we direct attention to the resolutions adopted as an expression of the sense of the members upon the chief events of the day as they relate to veterinary progress. They are of a high order, and reflect dignity and respect upon the scientific organization which promulgated them.

MEAT INSPECTION IN OTHER LANDS.

A chief sanitary inspector in England has reported at a recent convention of sanitarians that he has made "a careful inspection of the slaughter-houses of England and has seen things that compare unfavorably even with conditions alleged to exist in the great packing plants in the American city." Such an admission in the face of the sensational statements persistently indulged in by the scandal-mongering yellow press, which are conservatively estimated to have been 75 per cent. exaggeration, is a poor showing upon which to base such serious accusations as those made by the London *Lancet* some time ago. The latter publication is beginning to exhibit a return to sanity when it says that "a large part of the imported meat of London, including much of the chilled and frozen meat from the United States, is, in regard to disease and cleanliness, more satisfactory than much of the meat at home." Let the slanderers of American meats and methods spread the news that our products and our systems of inspection and control are now the best in the world.

DR. SALMON'S WORK IN URUGUAY.

The REVIEW feels very much inclined to engage itself to never again accept any statement in the daily press which deals in any degree with veterinary topics. When it became public property that Dr. Salmon had accepted a call from the Uruguayan Government every metropolitan paper gave the details of the work which he was to undertake, which was the organization of a department of animal industry upon somewhat similar lines to the one he established and so successfully conducted in this country for more than twenty years. In commenting upon his new mission the REVIEW reiterated the information contained in the dailies, and wished its colleague long life and happiness. A letter received since from Dr. Salmon contains the information that he has not engaged to do any sanitary work at all—that the position which he has accepted is that of Director of the Veterinary School of the University of Montevideo. He further states that he has not yet been informed from whence his faculty will be recruited, and that the statement that he would take his staff with him from this country was without foundation.

GOOD NEWS FROM CANADA.

THE glad tidings were officially announced at the New Haven meeting of the A. V. M. A. that the efforts to place veterinary schools in the Dominion of Canada upon a higher plane have been successful, and that in 1907 the Government will assume control of the Ontario Veterinary College, raise its standard to three terms of six months each, extend its curriculum, and altogether place it in the front rank of veterinary colleges of North America. Every loyal veterinarian in the land proclaims a loud "Amen."

READ CAREFULLY THE "ARMY VETERINARY DEPARTMENT" this month. Dr. Jewell's paper on "The Veterinary Service in the U. S. Army and the Military Veterinarian" will place the reader in possession of the conditions and needs of the service.

ORIGINAL ARTICLES.

THE VETERINARIAN AS A BUSINESS MAN.

By D. Arthur Hughes, Ph. D., D. V. M., Cornell University.

"Put money in thy purse."

Iago in "Othello."

Presented before the 43d Annual Meeting of the A. V. M. A., New Haven, Conn., August 21–23, 1906.

Every one of the gentlemen in this assembly will remember the allegations of the agricultural press in certain quarters at the time of Dr. Salmon's resignation as Chief of the Bureau of Animal Industry, U. S. Dept. of Agriculture, last October. If I mistake not, the principal statement made by the agricultural interests in one quarter was: that a "practical stockman" should succeed Dr. Salmon instead of "a scientist." In the course of the plea made in behalf of a practical stockman—though no candidate was named by those who made the plea, nor did a candidate ever come forward to represent them—certain representatives of the live stock interests gave vent to a specious argument, which was substantially as follows: The administration of the affairs of a Government Bureau, which concerns itself with the interests of the national live stock industry, is mainly a matter of business and calls chiefly for business ability. A practical stockman, with a long experience in the commercial life of the industry, at the same time who has large administrative ability, is the right kind of a man to choose for the responsible position of Chief of the Bureau of Animal Industry. The scientific man, these malcontents said, by his training and by the nature of his interest in purely scientific questions is thereby unfitted for an understanding of the business side of the trade. On analysis, the main contention of those who made this specious argument appears to be: a scientist cannot be, or is likely not, a man of business. To put their thought succinctly: scientific ability and business ability are incompatible in the same person.

The members of the American Veterinary Medical Association were quick to see the danger of the movement. Briefly it was this: the position of Chief of the Bureau of Animal Industry might be lost to the veterinary profession. The agreement was made that this must never come to pass. The men of the profession arose *en masse* with Herculean strength to prevent it. The fundamental law which founded the Bureau in question, it so happened, read: the Chief "must always be a veterinarian." Congress has not yet convened. Though Dr. Melvin had not received the largest vote in a canvas made for the voice of the members of the American Veterinary Medical Association on the candidates nominated by its executive committee, he was a strong second choice. This vote of confidence of the Association, coming at a time when the tide in the agricultural press had turned powerfully in Dr. Melvin's favor, encouraged Secretary Wilson, who had had long acquaintance with his work as Assistant-Chief under Dr. Salmon and knew him as a trusted official, to take advantage of the fundamental law, which plainly said a veterinarian should head the Bureau, and move him up to the position of Chief.

Notwithstanding the fact that this appointment made the endeavors of certain stockmen, through organs of the agricultural press, to prevent veterinary succession to the office of Chief, null and void; though the danger is passed, when we remember the agitation which the events leading to the appointment caused, we cannot pass by lightly the contention that it is improbable or impossible that the scientist could be a business man. I would therefore lay before you a defense of the American veterinarian as a business man.

I. THE FUNCTION OF THE VETERINARIAN AS A BUSINESS MAN.

Before we can successfully defend the veterinarian as a business man we must determine what is the function of the veterinarian and trace, in its broadest outline, what the purpose is he has in view as a worker.

Certainly the purpose of the veterinarian as a business man

is not primarily to pile up money nor accumulate property. That is the purpose of all business men in commercial life; but the man in the medical professions has, first of all, an interest in the service he gives for its own sake. If it were true that veterinary science were solely a matter of business, in this very admission we would have sanction for sharp practice which our professional ethics eschew; we would have no frown for the man who connives and schemes to make money by fair means or foul. Ours is essentially not a commercial occupation, but a professional occupation, and certain moral principles govern us in our practice which do not enter in commercial competition nor find place in the commercial world.

The functions of the veterinarian in his vocation, wherein he applies medical principles, are essentially threefold, to wit: the administration to the needs of sick animals; the prevention of the passing of diseases from animal to animal; the prevention of the passing of disease from animals to man. In the one case he is a physician and surgeon to animals; in the other veterinary sanitarian or public sanitarian.

The purposes, therefore, that he has in view, as a practical worker, are the healing of the sick and the prevention of sickness. As an honest scientific man these are the purposes he has in view whether he be a private practitioner, or a teacher, or whether he be employed in the service of a city, state or national government.

Preoccupied as every true veterinary scientist is with the desire to do things entirely for scientific reasons known to him as a professional man, he nevertheless must, without he be removed by the good favors of fortune from such a mundane question, take into consideration the question of personal profit which will give him a living. The obtainment of a better living and greater personal, pecuniary profit depends in the long run on three things: veterinary learning, skill and business capacity. All three of these may be employed for pecuniary profit in one or both of two directions—the application of the principles of veterinary medicine and surgery in private practice;

the application of the principles of veterinary medicine and surgery in some form of government service.

We have said that veterinary learning, skill and business capacity constitute the three necessities for financial success; they together are the *sine qua non* of that success. A man may have immense learning in the science but if he has not skill in its application and at least a measure of business capacity his career will end in fiasco. He is not likely to be very skilful in the application of the principles of veterinary medicine or surgery unless he has the scientific knowledge which it implies. Nor possessing both will he be a great financial gainer unless he can take advantage of his knowledge and skill for monetary ends.

We may now determine what is meant by veterinary learning, skill and business capacity in order that we may discover the degree of success obtained by veterinarians as business men in our day. Perhaps, too, in doing so, we may find an omen for the future business success of men of this profession.

1. What is meant by veterinary learning.

Scientific information which counts for anything in the business success of a veterinarian is from two sources: that which he gets at college; that which he gets experientially after leaving his *alma mater*. The broader the collegiate foundation of his knowledge the better the chance to make it good in the hard world of practical experience, whatever and wherever be the veterinary service rendered, whether in private practice or in government employ.

Collegiate life must be given up largely to theory. A large part of the endeavor is: to learn the myriad ascertained facts of the science; the technical theories which explain phenomena; the demonstration of theory by multitudes of experiments; the furnishing of means of practical application of the theory of medicine in clinic and operating room, together with a utilization of the knowledge of ascertained facts taught in earlier years of technical study. The means for obtaining these ends—learning of fact, demonstration of theory, and practical

application of theory and fact—differ in the various collegiate courses. Yet in each course the same end is kept in view. The question which vitally concerns any man's future success in the profession is: how well was the theory of medicine taught him in the institution where he was trained. In other words the question which concerns his future is: how broad was his educational foundation, was his course a smattering of a few studies in the science, or did it consist in laborious nights and days covering every field of knowledge to which we have fallen heir. The fashion is in certain quarters to scoff at theorists, theorizing and the learning of theory. Nevertheless it yet remains to be demonstrated how it is possible to make a man highly successful in the application of the principles of medicine and surgery unless he is very well taught these principles first. The wider the knowledge of medical theory the better chance a man has for success in the practical application of it.

Practical life is largely given up to the application of the theory. Moderate learning, high learning, count for little if scholarly studies of some sort are not continued after leaving college halls. This is the reason for many a man's failure in the professional business of practical life. The two key words for success in practical, professional life are: adaptability having knowledge for the occasion; studiousness, continued scholarly industry. Men with small learning at the beginning of their careers by industry have acquired great practical usefulness. Some men with large scholarship have made failures by lack of ability to adapt it to practical ends in the alleviation of suffering or prevention of it. Just as the chameleon can change its color to suit the occasion so we must have a varied adaptability if our knowledge is to win success. The more varied our knowledge and use of it the more our reputation increases and our success is assured. We are constantly reminded of our ignorance by the new conditions found. The point in the determination of our future success in a like situation is have we taken advantage of the difficulty by equipping ourselves for a similar one in the future. Hence the value of studiousness.

Here is the advantage professional men have over other workers: the more their professional knowledge increases, the wider their practical experience, the more valuable they become to the public. Until the moment of senility approaches, with advancing years, the more useful they may become. In most occupations fate acts just the other way.

2. What is meant by skill.

A man's value to the public consists not alone in the scientific information he has, whether obtained in his college days or since, but in the skill with which he can use it in keeping with the needs of the occasion in practical life.

We are apt to confine the meaning of the term skill to dexterity in the use of the knife or success in dosage. But in reality this is a limitation of the meaning in payment of tribute to the conceit of some very worthy private practitioners. Skill in veterinary science consists in ready application of knowledge of veterinary science for practical usefulness in any form. We have, for example, the skilful veterinary hygienist or sanitarian; skilful inspector of animals or meats for diseases; skilful communicator of veterinary advice orally or in written form, or consulting veterinarian; skilful veterinary publicist; skilful administrator of veterinary law; skilful investigator in laboratory and field; skilful disseminator of knowledge in educational lines. Each of these is capable of subdivision. Yet a person coming under any of these classes may be exercising greak skill, after his own particular gift, in utilizing veterinary knowledge for the public needs as occasion may demand. With the multiplication of veterinary interests has come the multiplication of needs for veterinary knowledge and the occasions for its exercise. There is a call for the exercise of our knowledge in directions before unguessed. There is therefore a necessity for preparedness, constant study, rapid and sure professional judgment. Expert specialized information is what is wanted.

We should know where to get information, what to do at any time, how to act and what to say. The demand is for skilful

exercise of professional intelligence, or, better, specialized veterinary intelligence.

3. What is meant by business capacity.

The chief difference between a man with business capacity and one without it, consists in the ability to systematize or to organize work so that it can be done accurately and expeditiously. There has recently begun publication a magazine for men in commercial life called *System*, edited by Albert Shaw, who is also editor of *The Review of Reviews*. The name is well chosen, for system usually marks the work of all men successful in commercial careers. The Americans are great organizers and they do not choke their organization with red tape. Simplicity, expeditiousness, are the two watchwords. Business ability exercises itself in the making of plans temporary or permanent for the rapid and successful conduct of work. It forms into a compact system new work as it appears, designating its class, the workers to do it and how it should be done. In commercial life, where the making of money is the end, the watchwords are always rigid economy where it is possible, the responsibility of lower to higher officials and of the higher to the head. The ability to organize and administrate are different exhibitions of one and the same gift. Ability as an organizer differs in degree but not in kind.

Is there any difference between scientific organization and commercial organization? There is a close verisimilitude between commercial organization and scientific organization; both requiring the same gift though the purpose of each is different. The purpose of a commercial organization is solely to make money; that of a scientific organization either to obtain knowledge or disseminate it, either to increase the intelligence of its members or to utilize that knowledge for the service of the people. The business capacity of the American veterinarian has commonly found exercise, therefore, in one or more of the following directions. First, institution of organization for the increase of veterinary intelligence among graduate veterinarians and prospective veterinarians. The organization of

graduate veterinarians for mutual help are the American Veterinary Medical Association, the state, county and city organizations. The organizations for prospective veterinarians are the schools of veterinary medicine throughout the country. Second, organization for the furtherance of private interests. Third, organizations for the veterinary interests of the states. Fourth, organization under federal statute for the veterinary interests of the nation.

As we have now an understanding of the function of the veterinarian in business matters, we can more closely scrutinize the allegation of business incapacity hinted at by certain stockmen last October, then advance the evidence for its disproof.

II. VINDICATION OF THE AMERICAN VETERINARIAN AGAINST THE CHARGE OF BUSINESS INCAPACITY.

We do not deny that there are graduate veterinarians in America without much business capacity; perhaps, as is true of all professions, there are many of them. What we deny emphatically is that a scientist, trained in the application of medical principles to the care of domesticated animals, is of necessity unfitted thereby for high business position where such technical knowledge is indispensable. We deny that technical knowledge and business capacity are impossible in the same person. We deny that a scientist cannot be a highly successful business man.

Veterinary science is nothing if not for practical application. The nature of veterinary work tends to keep men in touch with the live stock business in all its aspects, with the traders and the trade. Trade journals are apt to be his companions; trade questions are apt to be those which stir his mind. Looking at the matter from the financial side alone, his own enrichment depends upon the value of animals he treats; his fees fluctuate with animal values. Veterinarians are apt to be stockmen by nature and experience; often they are the sons of farmers and stockmen. The farer afield they go in any form of veterinary practice (and there are many forms) the more inti-

mate becomes their acquaintance with live stock problems, whether they be scientific or commercial. When we consider for a moment the kind of man who was desired by stockmen for Chief of the Bureau of Animal Industry from the point of view of the best interests of the trade, both scientific and commercial, we can see at once how foolish was their request as well as how groundless was their argument. They desired a man with purely commercial instincts and executive gifts, experienced in the trade and yet with a brain not burdened heavily with scientific information, which they intimated would render valueless his business keenness. They overlooked the fact that there is hardly a problem in the live stock trade which does not turn out to be at bottom scientific and calls for scientific information. A man having none other than commercial faculties, be those faculties ever so keen, would find himseif at sea as head of a scientific Bureau of the Government. Though it is true that a veterinarian, by the nature of his work, tends to become more and more intimately acquainted with commercial problems of the trade, and this is particularly true of a veterinarian in the service of the Government, on the other hand a trader, or one versed merely in trade points of view, cannot understand technical questions in veterinary science which call for mastery of specialized knowledge. The truth is that no greater wisdom was ever shown by the powers that sit in high places at Washington than when they incorporated into the fundamental law of 1884—under which the Bureau way formed—the phrase, "the chief shall always be a veterinarian."

Yet it is a curious thing to notice at this late day, now that the question of successorship to the chiefship has been sett'ed, that the minds which were acute enough to know the desirable points to be possessed if possible by candidates for that exalted professional position were not also acute enough to notice the trend of the times in the matter of governmental appointees. The success of the Civil Service Act, and its favor in the eyes of the people, has of late years greatly altered the situation of affairs in government appointments. The changes which have

governed in the promotion from low government position to higher place under the Civil Service law obtain also in the matter of appointees to still higher position. The whole tendency of the times is to place men by merit and length of service to higher and higher government office. Numerous scientific positions which were filled by political appointment in the old days are now filled by promotion from the civil service list. This simple fact seems to have been entirely overlooked in the agitation for appointment. The different branches of the scientific service of the government would be demoralized if each chief chosen was merely a political appointee. There would be no use for worthy young men to have ambition to rise to the highest station in their respective branches of the service. If it were found necessary to take a man from without, each time a scientific chief steps out, there would be no value in promotion under the Civil Service Act. Length of faithful service, the value of experience in the scientific branches of the government, would count for nought. The system upon which the scientific branches of the government was built would be a sham.

Again, so little was said by Dr. Melvin and his colleagues about his candidature that I venture to say that less was known about him than of any other man who aspired for the office. This is not wondered at by those who are in, or have regularly been in federal work and know the rules governing persons in the civil service list, or are aware of the tendency in the formation of rules setting forth their rights and privileges. Under the Civil Service law a man is almost entirely responsible for his acts to his immediate superiors. In his desire to rise he is handicapped by the fact that he is open to censure if he attempts to get office by political jobbery. He has little power to electioneer in his own behalf. The executive's rules tend to hem him about so that he must fall back on his own conspicuous merit and length of service to receive promotion. The tendency is to exclude men from doing anything but government business. Everything is done to make men devote them-

selves more and more to government business only—that is the effort is to create greater merit among the men and make them more worthy of promotion. It was well nigh impossible for Dr. Melvin to plead his own cause, even is he had wished to do so. His office forbade him. The general public is ignorant of the working out of the Civil Service Act in so far as it governs the conduct of employés, having only a dumb satisfaction in the merit system as such. Nay, more, the majority of American veterinarians, and shall I say the cream of the profession which is found in the American Veterinary Medical Association, are probably ignorant of the inner workings of the Civil Service Act.

The situation of affairs, preceding the appointment we are at this moment discussing, was a peculiar one in the history of veterinary medicine in this country. It was different from what it appeared to be. To the veterinary profession the all important question was the placing of some meritorious veterinarian in succession to Dr. Salmon as Chief of the Bureau of Animal Industry. The real question was should politics or any other machination prevail in the appointment of such a chief, or should promotion to that position be made under rulings of the civil service system.

The appointment of Dr. Salmon himself had been political in a good sense. The man was a man of merit, aside from the political influence which brought about his appointment. Excellently trained in veterinary science at Cornell University and at the National Veterinary School at Alfort, France, he was a professor in the University of Georgia and had held responsible position under the federal Commissioner of Agriculture before he was designated to organize the new Bureau of Animal Industry under Commissioner Loring. Dr. Salmon had high gifts in leadership. He organized the Bureau and was its Chief for twenty-two years, seeing it come out from insignificance to become the most influential Bureau in the Department. When he was at the pinnacle of his fame as a veterinary leader the system which he had instituted was far famed as a model national or-

ganization for the care of animal health and animal wealth. Dr. Salmon was the author of a long series of scientific papers on the problems confronting his scientific branch of the government work. The highest professional intelligence prevailed in all his writings. He excelled in scientific exposition and argument and his conclusions were those of the statesman who saw the full outcome of the scientific advice he gave in every situation. He made many scientific investigations himself and initiated or set in motion numerous other investigations. He was gifted as an investigator, as a writer, as a speaker, as an organizer—his business gift not being the least of all.

In his day the Bureau, together with its Meat Inspection Service, became subject to the rulings of the Civil Service Act. Hence it came about that the various chiefs in divisions of the Bureau were appointed on known merit discovered in length of service, or by attainments discoverable by the Bureau in actual work for it by the man. There could hardly be any other expectation than that the system would have effect in the choice of Dr. Salmon's successor. It was reasonable to believe that the chiefship, if it was not subject to change with administration, as it had proven in the case of Dr. Salmon, would be filled by promotion from below instead of appointment from without. Apparently the career of Dr. Salmon—the chief being always before the public eye—had overshadowed the men at Washington who were his counsellors. Among these were Dr. A. D. Melvin, the Assistant Chief of the Bureau, Dr. Arthur Manly Farrington, Chief of the Inspection Division, and men concerned with scientific investigation, like Dr. Mohler, Chief of the Pathological Division. Drs. Melvin and Farrington had a large share in the administrative work of the Bureau and for twenty years, rising step by step from below, had come to have, with the growth of confidence in them, positions of power. All official authority emanated from the chief; but a large share of his official information and judgment had come from his assistants as counsellors. Secretary Wilson, knowing the law that a veterinarian could be the only one to succeed

Dr. Salmon, and having full confidence in his proven men, gave decision that Dr. Melvin should be made chief, and that the men from below should be moved up, Dr. Farrington becoming assistant chief. The effect upon the *morale* of the service of this decision is great. In future the appointments will be made under the guidance of the same policy. The Civil Service system prevailed. But if Mr. Wilson had not wished to decide for the system, there was other ground upon which to decide the contest. Dr. Melvin was found to have the confidence of the American Veterinary Medical Association. He had the confidence of the packing interests, who believed in his sanity and good sense. He had the confidence of all the officials of the Bureau and the Secretary of Agriculture himself. After gradual promotion during nineteen years of service, and being approved of all along the line, Dr. Melvin was found to be worthy of the highest office at present in the gift of the Government to a veterinarian. The practicality of the man and the system was demonstrated. A contest of such a nature will probably never occur again, at least not in our day.

But what shall we say of the candidates for the place other than Dr. Melvin? At the time when the resignation occurred it looked as if there was danger of the chiefship being lost to a veterinarian. The condition of affairs looked more precarious when Secretary Wilson thought it advisable to call for candidates from the American Veterinary Medical Association—but he had it steadfastly in mind that, in accordance with the law, a veterinarian should be appointed. The business ability of The American Veterinary Medical Association was at that time shown in the immediate activity of the Executive Committee. The idea which was firmly and fixedly in mind and which had governance in all action of the veterinary press, The American Veterinary Medical Association and the candidates, indeed of veterinarians throughout the land, was to save the responsible office of Chief of the Bureau of Animal Industry for a veterinarian. Human action is always governed by numerous motives. Nevertheless, no one can say but that the main motive

in the mind of each candidate was to seat a veterinarian in Dr. Salmon's chair. All honor to the men who sacrificed time and money for that end. All honor, then, to The American Veterinary Medical Association for such a worthy purpose.

The appointment of a veterinarian, in the person of Dr. Melvin, as Chief of the Bureau of Animal Industry, is a striking instance of the vindication of the practical scientist against the charge that such a man necessarily lacks business capacity. It is all the more striking in that Dr. Melvin, before appointment, was completely exonerated from the charge of inappreciation of the business interests of the great live stock trade which it is now his duty to foster in every way that his science will assist him; while at the same time we must remember that the live stock men of the West stoutly supported him in his candidature, thus giving the lie to the absurd idea that knowledge of science and knowledge of business are incompatible.

We may now pass from this specific instance of the vindication of the American veterinarian against the charge of inappreciation of great business interests, all the more pleasing to us in that it was a vindication before the tribunal of the greatest business interests with which we have to deal—the national live stock and agricultural businesses—and turn to a consideration of how the veterinarian has shown his instincts for the proper conducting of large affairs by the origin and development of system for the transaction of that business with which he has to deal.

1. *In the institution of organization for the increase of veterinary intelligence among graduate veterinarians and prospective veterinarians.*

The organizations of graduate veterinarians for their mutual benefit, particularly the propagation of professional intelligence, are: The American Veterinary Medical Association; the state, county and city associations. Of these, The American Veterinary Medical Association, which started forty-three years ago with a local meeting in New York, then continued with semi-

annual meetings in New York or Boston for many years, has since attained to a national rôle and has its tentacles in many states and even foreign countries. It has developed into its present proportions under wise leadership, and, professionally, has proven itself, as is instanced in candidature for Chiefship of the Bureau, to be in reality the national voice of the American veterinarians. Doubtless it tends to become more influential. Its mandate effects veterinary education; state law and the general intelligence of the profession is increased by it. In its turn it is looked to by organizations within a small circle—state, county and city associations. The purpose of these differs the one from the other. The members in them seek self-protection; they discuss professional problems; they exchange ideas. The organizations are virile in proportion to their membership and their needs. No doubt all of them profoundly influence professional sentiment. They should be able to awaken interest in the national association and be feeders of it. The gift for organization shown in the formation of all these associations, their success as organizations and in fulfillment of their purposes tends to disprove statements of business incapacity hurled against veterinarians.

The organizations of institutions of veterinary learning for the instruction of prospective professional men if they have not, in all cases, tallied with the needs of animal kind nor with the ideals of the scientific founders, have nevertheless been started to suit the necessity of the case. Dr. Robert Ostertag, the German pathologist, who recently paid us a visit and made a study of our educational and governmental institutions and wrote of us in a "Travel-Study" (Reise Studie), has made a classification of American veterinary schools which I here adopt with some modifications. They are: State veterinary colleges; institutions in process of organization as state colleges; institutions partly private and partly under state control; private schools.

First, the state schools are part of the regular state educational organization. They are four in number—Cornell, Penn-

sylvania, Iowa and Ohio State. Each originated in the brain of a clear-headed veterinarian and owes its organization and effectiveness to him, signally bespeaking business ability in the founders, while each college is carried on by the ardor and loyalty of themselves or their successors. In the state institutions the organization for the business of the increase of veterinary learning is strong, the influence of these colleges has ramification into every phase of life in the state connected with the science. Their perpetuation through state endowment is assured so long as they continue to put forth the fruits of scientific usefulness. Second, there are several institutions which may be said to be in process of organization as state colleges. These are Minnesota and perhaps California and Missouri. I would not be surprised to see regular state veterinary colleges at such, and perhaps other state universities in my day. In them, and in others, we find professors and assistants giving courses partly leading to a degree or counting towards a degree when the recipient goes to a regularly approved college. The tendency of such a nucleus through the organizing ability of the professors, is to grow into state veterinary colleges. Third, some organizations are partly private, in that they are largely dependant for existence on student fees, though they bear a direct relation to the state educational organization. Such an one is the New York-American College of New York City, which is under the supervision of the University of the State of New York, while at the same time it is part of the organization of the University of the City of New York. Fourth, there have been founded amongst us private schools which have received the strictures of Ostertag, as they have of others here in America. There are two in Chicago, two in Kansas City, one each in Grand Rapids, Indianapolis and San Francisco, etc. There have been diatribes enough on these institutions. What now can be said in their favor? Though they are very faulty, they are at least a tribute to the business capacity of men who saw a good field for educational exploitation and made use of it. The men who have founded them, in most cases, perhaps, have done what they

could under the circumstances to bring them to a higher state of usefulness. Is it not true that the Royal (Dick) College, Edinburgh, and New College, Edinburgh, were founded in much the same way? In most of the colleges also in every class one is apt to find that the students have organized societies of comparative medicine. Much embryonic business ability is shown in these associations. They give a man parliamentary practice and prepare him for his place in an association of graduates when he shall have found his place in the outer world.

2. *Organization for the furtherance of private interests—private practice and other enterprises where business capacity has been shown.*

Certainly in what is called private practice, and in other professional enterprises where the veterinarian works individually for his own private fortune, there is a large field for the display of business talent. Here is where veterinary learning, skill and business capacity, as they were defined in the first part of this paper, are so largely shown. The veterinarian in all forms of private professional enterprise has displayed the variety of his professional knowledge, the variety of his skill and an adaptability to the varying needs of localities. He has acquired property, obtained business standing in communities, been made an official in city affairs, written semi-technical books and acquired fortune; he has been, in a word, a man of affairs. He has been found to be thinking with the times and for the times. He has had that extraneous information knowledge of the world, which is an increment of success. His acuteness in business can be seen in almost every town, for in most towns there are propertied veterinarians. One has but to glance through veterinary periodical literature to see the variety of subjects touching the business with which his mind is engaged.

3. *Organization for the veterinary interests of the states as such.*

The influence of veterinarians to bring about the enactment of legislation in the separate states is remarkable. Through

his good offices law has been passed regulating veterinary practice. He has seen the law through. He has defined what the educational qualifications of practitioners should be, sat on examining boards, and laid down rules for certification, registration and prosecution. He has had law placed on the statute books for the prevention, control or extirpation of infectious or other communicable diseases among animals, hence the live stock sanitary boards and laboratories of the same. He has made it part of the law that infectious diseases should be investigated. He has administered the law as a state veterinarian; or, as a state officer receiving his pay from the national funds, that is as an experiment station veterinarian, has made investigations himself. He has made it his business to initiate, organize and conduct the professional affairs of his own state.

4. *Organization under federal statute for the veterinary interests of the nation.*

The greatest achievement of the veterinarian in the United States, he being delegated to conduct the scientific business of the Government relative to his profession, is the organization of that vast system the Bureau of Animal Industry. Whether one considers its origin, its beginnings, its extension, its accomplishments, its present scope, its future scope, its past leaders, its present leaders, in all he would be transfixed by the nobility of this scientific foundation, the noble-mindedness with which it has been conducted, the extraordinary business capacity which has marked its progress. If the wisdom of the law which founded it, whereby a veterinarian was made its chief, has not been verified in the past by virtue of its service to the Republic, the grand opportunity is given now. In the month of agitation which brought into existence the new Meat Inspection Law of June 30, 1906, in all the clamor, hardly a murmur from sane minds, could be heard against the meat inspection service of the Bureau of Animal Industry, for that service had been conducted in strict keeping with the power allowed by the law of 1891. The scurrilous articles that were written against the inspection drew attention rather to the limitations

of the law than to faultiness in the inspectors themselves. The people soon saw that the inspectors were not blamable for their inability to transcend their prerogatives. Just as it took only one month for the agitation to bring the new law, so by one month later, August 1, 1906, the men of this profession at Washington had formulated the new inspection regulations based on the law. With so much business despatch can veterinarians in the service of the nation meet the public needs.

As in the past, so now, the Bureau of Animal Industry is the best proof of the business capacity of the American veterinarian.

INTOLERANCE.—There is no intolerance so dangerous as that based on a little partial knowledge. The deeper one delves into matters scientific, the more humble he grows as to his own attainments, the more profoundly he is impressed and oppressed with the hugeness of the universe, the immensity of the knowable, and his own littleness, the narrowness of his limitations. A very wholesome sentiment it is, too. But the man whose cranial capacity is fully distended by the presence of a single thought, whose grasp of a single truth is so spasmodic that all else is forced out of his grasp, is the man who demands that all the world must square belief and practice by him and his; and condemns to the demnition bowwows all who disagree with him.—(*Am. Jour. of Clinical Medicine, July, 1906.*)

HALF CALF AND HALF LION.—A dead calf, with the head, body and general markings of a lion, and the soft hoof formation peculiar to cattle, is in the possession of John Koke, of 2121 North Nevada avenue, this city. The animal has just been received from a taxidermist, who stuffed it. The freak was born on a ranch owned by George Cross, near Silver Cliff, in the Wet Mountain cattle country. The mother, after staying with its calf two days, became frightened and ran away. The deserted "cub" calf was then taken care of by the ranchmen for some time, but was finally found dead in its stall. The head is nearly identical with that of a half-grown mountain lion, while the mouth, contrary to the characteristics of cattle, has two sharp fangs on each side of the upper jaw. Its body is long and sinewy. The hair is a pale brown, and the legs short and stocky, although the feet are of soft hoof formation, and cloven. (*Colorado Springs Correspondence Denver Republican, Aug. 9.*)

THE EFFECT OF CHLOROFORM ON THE RESPIRATORY TRACT OF THE HORSE.

By Newell D. Backus and Percy J. Axtell.

Thesis presented to the Faculty of the New York State Veterinary College, Cornell University, for the Degree of Doctor of Veterinary Medicine, 1905.

The reason for research on this subject, and the desire to proceed with the same, was brought to our attention by the facts that in modern surgery of our domestic animals we are compelled to use an anæsthetic, for humanity's sake, for the insurance of asepsis, for the convenience of the operator and the safety of the animal. We are confronted in many cases by fatal results after the administration of chloroform, which fatality is thought to be caused by the drug, directly or indirectly. It is our aim to determine what the effects of chloroform may be on the respiratory tract of the horse, when administered for surgical operations, and to determine, if possible, the precautions which may reduce the dangers to a minimum.

Before proceeding, it may be of interest to learn something of the history of chloroform and of some of the other anæsthetics, and the way they act.

Ether was used for general anæsthetic purposes previous to chloroform and the first operation under ether was performed Oct. 14, 1846, by Warren, of the Faculty of Medicine, at Boston. Boats and Lister first employed ether in England during 1847. Simpson drew attention to the anæsthetic properties of chloroform, which he declared superior to its predecessors, in 1848. Chloroform soon displaced ether, maintaining its supremacy in human surgery until a recent date. In animals, save perhaps the dog and the cat, it is still the anæsthetic preferred.

In general anæsthesia, the patient is thrown into a more or less profound sleep. It is not always necessary to act on the entire individual, however; sometimes the operation affects only a very limited area, and local anæsthesia suffices.

As generally considered, anæsthetics have a less extended usefulness in animals than in man. Pain should be spared as

far as possible, but there are several things to be considered. The expense is no small item, and there are morbid conditions in which it is contra-indicated:

(1.) Diseases of the heart*:

(a.) Lesions of the valves or myocardium.

(b.) Dilatation and hypertrophy.

(2.) Diseases of the respiratory tract:

(a.) Emphysema, pneumonia, chronic pleurisy, etc.

Our clinical records contradict these statements; all these have been anæsthetized with good success, except pneumonia, in which it proved fatal.

There are many operations which can be performed with comparative safety which would be rendered absolutely impossible without general anæsthesia, as in the reduction of hernia, delivery in case of dystokia, laparotomy, and, in fact, all cases where one works in dangerous proximity to important organs.

General narcosis being the result of a special action exerted directly on the nerve centres by the anæsthetic agent, the first necessity is to insure a sufficient quantity of the anæsthetic arriving at these centres. The best known method for volatile anæsthetics to be conveyed to these centres is by penetrating the respiratory mucous membrane. Volatile anæsthetics, administered into the tissues direct, escape to a large extent through the walls of the pulmonary vessels, are expired, and fail to reach the nerve centres in sufficient quantities to produce the desired effect. On the other hand, volatile substances, introduced in a state of vapor into the respiratory tract, are freely absorbed by the circulating blood in the lungs. This blood passes to the left heart and general arterial system, including the nerve centres, rapidly producing anæsthesia.

Anæsthetics administered via the respiratory tract produce a series of phenomena:

(1.) Period of excitement.

(2.) Period of anæsthesia, or surgical period.

(3.) Period of collapse.

* Dollar.

The period of excitement is supposed to be due to the action of the anæsthetic vapor on the nerve terminations in the mucous membrane of the upper respiratory tract and the paralysis of the cerebral inhibitory centres and later due to the action on the greater centres. This is characterized by perverted sensation, excitement and hyperæsthesia, of the sense organs. During this period, in animals predisposed to such complications, anæsthesia may produce respiratory, or cardiac, syncope.

Reaching the second or surgical period, which is characterized by suspension of activity in the nerve centres, the animal is in a profound, artificial sleep, the muscles relaxed, respiration slow, movements of the chest walls are diminished, but those of the abdomen and flank are slightly increased, and as sensation is lost in the various regions reflexes cease. Sensation does not simultaneously disappear in all regions; the limbs and the trunk are the first to be affected, then the organs of sense.

Histology of the Respiratory Tract.—The mucous membrane of the larynx and pharynx are the same, having a covering of epithelium, a tunica propria, and among the epithelial cells of the trachea are found many goblet cells. The epithelium, covering the free margins of the epiglottis and parts of the larynx, as far as the false vocal cords, is stratified squamous in character. At the lower edge of the false vocal membrane, the epithelium becomes stratified, ciliated columnar, which is retained throughout the ventricle of the larynx. Over the true vocal cords, the epithelium once more becomes squamous stratified, beyond which point the stratified, ciliated columnar character is resumed and retained throughout the trachea and bronchi. Numerous taste buds, identical in structure with those on the tongue, lie embedded in the posterior surface of the epiglottis.

Theory of Ciliary Movement.—The number of cilia attached to a single cell, varies from one to two dozen, their length varying widely, those of the epididymus being about ten times longer than those of the trachea. The number of vi-

brations of the respiratory cilia average about ten per second with rapid primary and a much slower secondary movement to the original position.

Conclusion. — The cilia morphologically are direct outgrowths of the protoplasm of the cell and since this is inclosed in each case by a pellicle, it must also invest the outgrowing process and form the delicate wall of the tube filled by cell plasm. The tube thus formed may be cylindrical or flattened, and as they work in only one plane, we would expect that they were flattened as their minute size hinders us from ascertaining their exact shape.

The investing pellicle or cuticle in most cases has undergone differentiation in such a way as to cause movement of the cilium to be executed in a definite direction, but before this differentiation is complete, we should expect the protoplasmic outgrowth to retain many of the functional manifestations of undifferentiated cell protoplasm. The most feasible of these would seem to be from the changes produced at the surface of the cell.

There can be no reasonable doubt but that variations in the tension of the superficial layer must be due to the local chemical changes caused by agencies acting either from within spontaneously or from without as stimuli.

These cilia are attached to various forms of epithelium in the lower animals, in man and higher animals they are limited to the columnar form.

The following experimental and clinical observations are submitted, illustrating the influence of chloroform anæsthesia upon the action of the cilia and the functions of other parts of the respiratory tract.

Case No. 1.—This animal was a worn-out horse which was used for surgical exercises. The chloroform was administered by our method, which is described in our conclusion of this article.

This animal died on the operating table after being under the influence of chloroform for about two hours. The nose

was not depressed and there was an excessive amount of mucous discharge (about one litre), from the nostrils upon depressing of the head after the removal from the table. Prior to death, the blood from the wounds was black.

Microscopical examinations were made of the cilia of the trachea and bronchi with special apparatus devised for the work.

This examination was made about four hours after death, and some ciliary action was found to be present. By placing a drop of chloroform so the vapor would come in contact with the specimen, the action of the cilia diminished rapidly and stopped, and it was impossible to revive the action.

Bacteriological examination was made by taking bouillon and agar cultures from the trachea, bronchi, and lung tissue and nasal mucous discharge. Bouillon cultures from the trachea after three days, were cloudy, acid in reaction; the organisms were non-motile rods and some micrococci. The agar culture examined at the same time, showed a raised, glistening growth.

The bouillon cultures from the mucus of the nose had a peculiar odor which could be compared to the odor of the breath of an animal suffering from inhalation pneumonia.

Case No. 2.—This animal was like that in Case No. 1. This case was very hard to keep under the influence of chloroform, presumably due to the action of some drug given previous to the administration of the chloroform. The animal was under the influence of the anæsthetic for about four hours, but for no definite period did we have good surgical anæsthesia. At the termination of this period, the animal was killed by bleeding from the carotid. Post-mortem examination showed the small bronchioles and bronchi nearly filled with a frothy mucus and the air sacs were also partially filled. Observations on the ciliary movement and a microscopical examination of the trachea and bronchi, gave the same results as in Case No. 1. Bacteriological examination showed the agar slant, with ground glass appearance and raised growth, and bouillon cultures revealed nearly all genera of bacteria.

Case No. 3.—This animal was similar to that in Case No. 1. The animal was in apparent health and was destroyed instantly by shooting in the head for the purpose of ascertaining the normal condition of the respiratory tract. This animal had had ordinary treatment in regard to care and feeding, and after the shot was fired did not take an inspiration. Careful post-mortem examination was made with the following results: Macroscopical examination showed the entire respiratory tract to be in a perfectly normal condition. The examination failed to reveal any foreign material below the larynx. Examinations of the cilia, at various parts of the trachea, and repeated at short intervals for six hours after death, showed that the ciliary movements were checked after that length of time, probably due to the absence of moisture.

Chloroform vapor brought in contact with the cilia at any time during this period stopped the action almost immediately.

In the bacteriological examination, bouillon and agar cultures were taken from the post nares, and from the trachea just below the larynx, at the bifurcation of the trachea from some of the smaller bronchi and from the lung tissue. All proved to be sterile except the one from the post nares. This showed several genera of bacteria, which were not identified.

Case No. 4.—This animal was in the same condition as that in Case No. 1. The horse was placed upon the operating table and the nose was depressed. Chloroform was administered and the animal was kept under deep anæsthesia for a period of about three hours. He was then destroyed by carotid bleeding. Upon his removal from the table, a profuse discharge of mucus came from the nostrils. Post-mortem examination showed an excessive amount of frothy mucus in the bronchi extending to the smallest bronchioles and the alveolæ of the lungs. Examination of the cilia was made two hours after death and at varying intervals for eight hours thereafter. Their action then ceased. Probably the absence of moisture played a major part in causing the death of the cilia.

During the bacteriological examination, bouillon and agar

cultures were taken from the trachea, bronchi and lung tissue, also from the mucous discharge. The bouillon cultures, after three days, showed cloudy growth, acid in reaction and fœtid odor. Agar cultures gave a vigorous, raised growth. In this case, some of the mucus was collected in a sterile test tube and allowed to remain at ordinary room temperature for a period of thirty days and there was no visible change in appearance. Cultures were taken after the lapse of this period and we obtained the same results as on previous occasions. The microscopical examination of these cultures showed a motile rod, micrococci, and nearly all genera.

Case No. 5.—This animal was in the same condition as that in Case No. 1. The animal was an anatomy subject and tracheotomy was performed about ten inches below the larynx, no chloroform having been administered. The object of this experiment was to ascertain the length of time which the ciliary action would continue, if kept in a moist chamber and without the previous effects of chloroform. A portion of the trachea was removed, including the lining ciliary epithelium and placed in a watch glass which was then placed in a dish containing some water. With a hand lens, careful examination was made for foreign particles on the surface, but none could be seen. Neither was the ciliary movement noticeable. Small sections of this lining ciliary epithelium were examined in a special chamber under a compound microscope; this apparatus being so arranged that a current of moist air or moist chloroform vapor could be alternated and brought into contact with the active cells. The cilia were very active and by passing the moist chloroform vapor over them, the action was gradually but continually checked, it requiring about one and one-half minutes to completely check their action. Moist air was then passed over the same cells and brought in contact with the same. The object was to revive their action, if possible; but failed to do so. This experiment was tried several times, and when once checked by chloroform vapor, it was impossible to revive their action. In this case, the action of the cilia was

watched at varying periods for twenty-seven hours after removal from the animal and motion was still present. Bacteriological examinations of the trachea at this point were negative.

Case No. 6.—Was in excellent condition, but was destroyed because of incurable lameness. The animal was secured on the operating table and was placed under deep surgical anæsthesia. After chloroform had been administered for about thirty minutes, a piece of the trachea was taken to the laboratory and examined for ciliary movement. No action was present. After the animal had been under the effect of the anæsthesia for about one and one-half hours, another piece was taken; with the same result. These preparations were kept in a moist chamber for six hours and examined at various intervals, but the action did not resume. The animal was killed by carotid bleeding after about three hours and post-mortem examination showed no ciliary action. The lungs, bronchi and trachea were practically the same as in the other cases, both microscopically and bacteriologically.

Case No. 7.—This animal was chloroformed by use of a nose bag. About six ounces of chloroform were required to place the animal in profound anæsthesia, although it was accomplished in about three and one-half to four minutes and required about three ounces more to keep the animal under for fifteen minutes, when the nose bag was replaced by a piece of cheesecloth and the animal was kept under the influence of the anæsthesia for about three hours, in the usual way. Post-mortem examination showed more mucus in the bronchi and alveoli of the lungs, and bacteriological examination showed the same results as on the previous cases.

Case No. 8.—This animal was about twenty years old, in fair condition, and had been cared for and fed in the usual way, no preparation in this respect having been made for the administration of the chloroform. She was cast in a box stall. With the aid of the chloroform bag, as used in Case No. 7, she was placed under deep anæsthesia in about four minutes and kept

in this state for about thirty minutes. The amount of chloroform required to accomplish this was five ounces. The casting harness was removed as soon as anæsthesia was acquired and at the end of thirty minutes the chloroform bag was also removed. We then raised a dust and scattered chaff and horse manure about in the stall, no precaution being taken in regard to position of the head. The animal was then left alone to revive, but was carefully watched. In twenty minutes, she was sufficiently revived to raise up on her sternum, with nose pendant, and there was a considerable discharge of mucus from the nostrils. In forty minutes, she arose to her feet without any assistance and appeared to be in very good condition. At the end of fifty minutes, she was eating some hay which had been left in the stall and was able to swallow without any difficulty. Her temperature was taken at various intervals for three days afterwards and it did not rise above 101° Fahrenheit, at any time. Eleven days later she was placed upon the table and chloroformed and kept under the influence for three hours. After she had been under the influence for thirty minutes, and one and one-half hours, respectively, pieces of the trachea were removed and examinations made to ascertain the movements of the cilia; none were found.

Post-mortem examination was made two hours after the time of the killing of the animal by bleeding, and no ciliary action was found. Respiratory tract was found to be in a normal condition, except for the presence of an excessive amount of mucus. Bacteriological examinations gave the same results as in previous cases after chloroforming.

In the larynx, just back of the arytenoid cartilage and vocal cords, was found a collection of food material, which undoubtedly came from the mouth, as that cavity was found to be partly filled with imperfectly masticated food at the time of administering the anæsthetic. Bacteriological examination of the mucus on each occasion was identical, there being a cloudy growth in bouillon with fœtid odor and a raised growth of agar slant.

CLINICAL DATA.

The following table of equine patients undergoing chloroform anæsthesia at the New York State Veterinary College, Cornell University, gives some idea of the mortality due to chloroform anæsthesia, with causes of death:

Time.	Total No.	Recoveries.	Deaths.	Causes of Death.
15–45 minutes . .	71	70	1	Chloroform pneumonia.
¾–1½ hours . .	53	49	3	Chloroform pneumonia.
1½ hours and upwards	11	8	3	Chloroform pneumonia.
Total . . .	135	127	7	

Two experimental animals died from the effects of impure chloroform.

It has been shown that chloroform vapor stops the action of the cilia along the respiratory tract and also stimulates an excessive secretion of mucus, which can flow into the lungs without any hindrance when the cilia are inactive and the sensation paralyzed so that no coughing occurs. This mucus may come from the post nares, which we have shown to have an abundant supply of bacteria. These bacteria being conveyed to the lungs in this mucus, we have all the requirements for rapid and progressive growth of these organisms, as the lungs at body temperature act as an incubator, and, as is well known, body temperature is favorable for the multiplication of them.

As a horse very often breathes through the mouth when anæsthetized, our Case No. 8 suggests that it is quite an essential feature to have the mouth empty, which will tend to prevent inhalation of any foreign materials from this source. It is well to have the stomach empty, or nearly so, as this will guard against any food being regurgitated into the mouth from this organ. Our clinical records show two instances in which food was regurgitated into the mouth from the stomach while the horse was in a state of profound anæsthesia.

As we have mentioned the increase of mucous secretion in the nasal cavities, post nares and trachea, it is well to guard against this passing into the lungs by depressing the head and

keeping the nose bent downward. This is accomplished best by having a depressed headpiece on the operating table. The discharge of mucus is also aided by our method of administering chloroform for anæsthetic purposes, which is as follows:

Plug the lower nostril with a ball of absorbent cotton.

Put a piece of cheesecloth over the nose, covering both nostrils.

With a chloroform bottle, or any other container, with a cork so fixed as to allow the chloroform to escape in drops, cause it to drop on the cheesecloth over the upper nostril, at each expiration, so that the current of expired air will break up the drug and prevent liquid drops from entering the nostril:

We claim the following advantages:

1. Easily adjusted.

2. By keeping the head depressed, the mucus is allowed to escape from the upper nostril and is absorbed on the cotton from the lower one.

3. The rate of administration can be varied instantly.

4. We have been able to acquire surgical anæsthesia and to maintain it for a greater length of time at a much less expense.

5. It is administered through a tracheal wound by the use of a funnel and cheesecloth just as readily as through the nostril and thereby becomes available in case of operations about the head and larynx.

THE PROGRESS OF THE VETERINARIAN IN THE PHILIPPINE ISLANDS.

By David G. Moberly, D. V. S., Chief Veterinarian, and Robert H. McMullen, D. V. S., Veterinarian Bureau of Agriculture, Manila, P. I.

In April, 1904, a Veterinary Corps was organized by the United States Philippine Commission, as a division of the Board of Health. The division consisted of thirteen veterinarians, twenty inoculators, and three native meat inspectors.

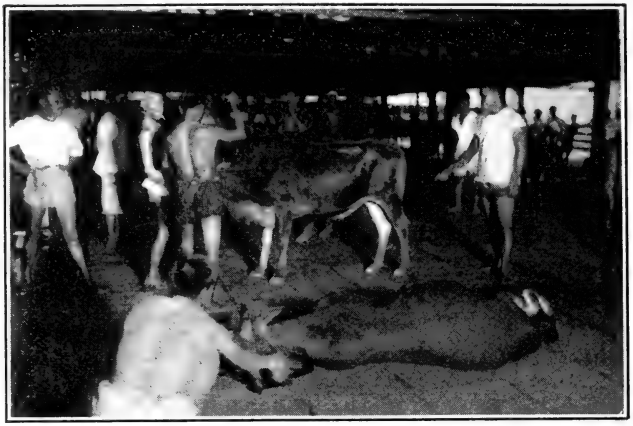
At the time of the organization of the corps, rinderpest was prevalent in thirty of the forty provinces of the Archipelago. Since the first outbreak of this disease, subsequent to American occupation, and which occurred in 1899, the mortality reached about sixty per cent. of the total number of bovines in the Islands and this condition practically paralyzed the agricultural interests, as carabao and cattle exclusively are used in tilling the soil.

Surra was introduced in the summer of 1901, supposedly by a shipment of horses from China. This disease spread rapidly throughout the Islands, attacking horses, carabao and cattle. About sixty-five per cent. of the total number of equines were affected during the first eighteen months of the outbreak, and the mortality among these was 100 per cent.

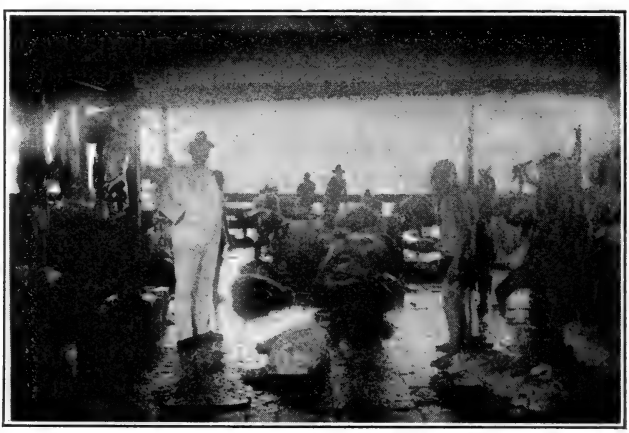
According to Spanish reports, glanders (called *Muermo* by them) has existed here for a century or more, and at the time of the arrival of the Americans, it is safe to state that it was present in every hamlet.

Epizoötic lymphangitis, known by the Spaniards as *Lamparones*, was also widespread and it attacked many of the equines which had escaped the ravages of surra and glanders.

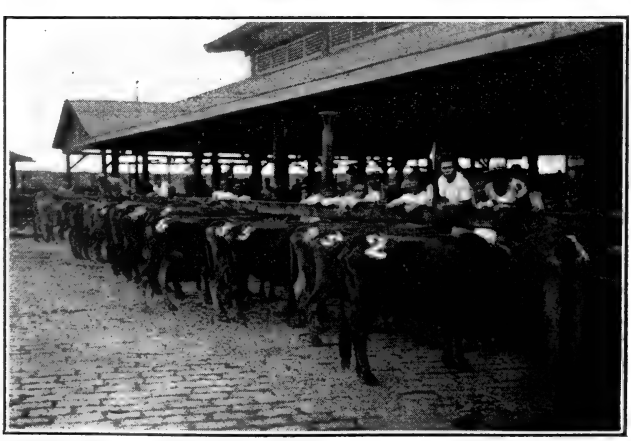
Foot-and-mouth disease was general throughout the provincial districts. All Philippine cattle carry the Texas fever tick, *Boöphilus australis*. Hæmorrhagic septicæmia had been encountered in Manila and in a few of the provinces. Anthrax prevailed in northern Luzon, having been discovered by Dr.



FILIPINOS KILLING CATTLE BY PITHING



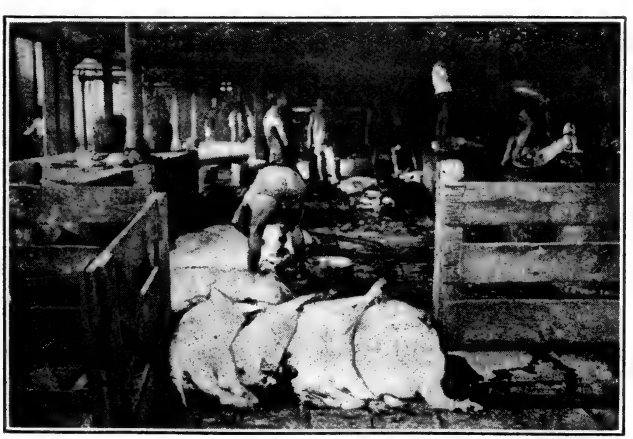
CHINESE KILLING HOGS BY STABBING



A LINE OF CONDEMNED CATTLE.

INSPECTING HOGS FOR CYSTICERCUS CELLULOSA (NOTE THE CYSTS).

CONDEMNED FOR CYSTICERCUS CELLULOSA. (HOG HANGING BY HIND LEGS.)



SCALDING VATS.

McMullen in 1904. One distinct outbreak of dermatitis gangrenosa contagioso occurred among the draft horses in Manila in 1904. Hog cholera and chicken cholera had claimed many victims.

A perusal of the above conditions which confronted us at the time of our organization must convince one that the lot of the Philippine veterinarian was indeed not a happy one.

Serum therapy and quarantine regulations are employed in combating rinderpest. The serum is prepared at the Serum Institute, a branch of the Bureau of Science. The methods adopted in inoculating are the simultaneous, the deferred and the use of serum only.

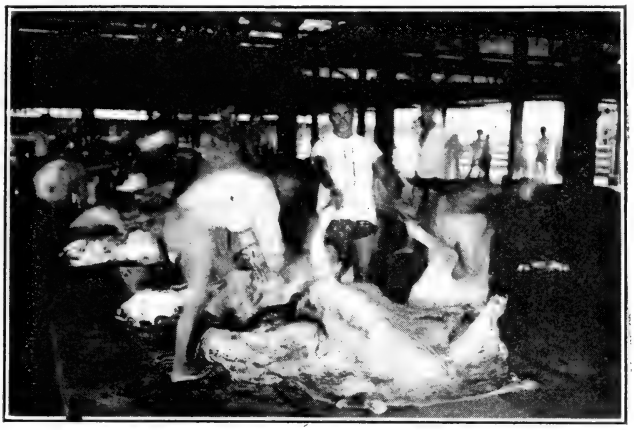
Serum alone is only used as a temporary prophylactic and curative agent, and among herds actually infected. The dose as a preventive is 50 c.c. hypodermatically and as a curative 300 to 400 c.c. in doses of 50 to 100 c.c. daily.

The deferred method is employed in herds exposed, and before the period of incubation has elapsed. This method consists of injecting 50 to 100 c.c. of serum, followed by 1 c.c. of virulent blood ten days after the serum injection, provided no cases develop during the time intervening. If, however, rinderpest exhibits itself, more serum is given and the use of the virulent blood postponed for another ten days.

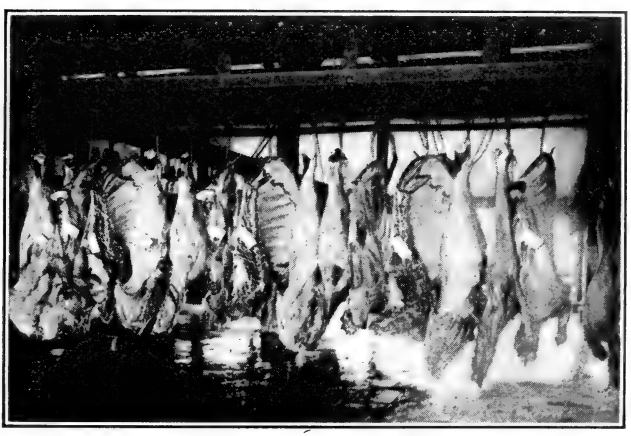
The simultaneous method consists of injecting 30 c.c. of serum on one side of the animal and 1 c.c. of virulent blood on the other, and it is applied to animals in non-infected communities which are brought into communication with infected herds.

By the adoption of the above-mentioned methods, we have succeeded in stamping out rinderpest from the entire Archipelago, with the exception of the Islands of Panay, Southern Negros Bohol, Northern Mindanao and the southern extremity of Luzon, in which districts the disease is being held in check. It will be remembered that the Archipelago includes over 1,000 islands in the group.

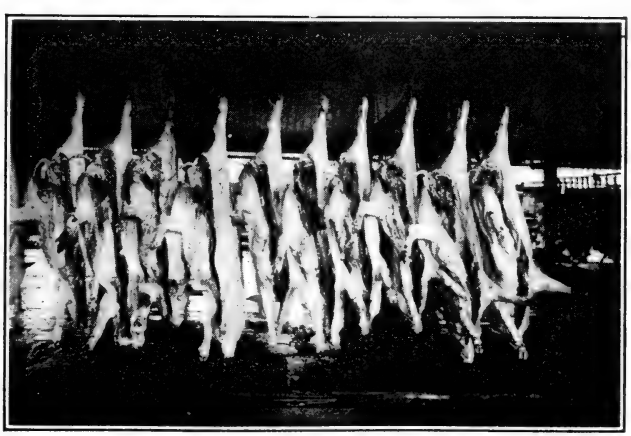
Surra is incurable in the horse and mule. Cattle and cara-



DRESSING CATTLE



BEEF INSPECTED AND DRESSED.



PORK INSPECTED AND DRESSED.

bao have been known to harbor the parasite for many months without any apparent harmful effect. The mortality among cattle and carabao has not exceeded five per cent. When it is considered with what difficulty healthy equines are prevented from coming in contact with infected bovines, it will readily be realized what a knotty problem presents itself. The infection of surra is also carried by flies.

Animals with glanders are promptly destroyed.

Epizoötic lymphangitis is amenable to treatment. In Manila the use of animals thus infected is prohibited.

As previously mentioned, all Philippine cattle are carriers of the Texas fever tick ; thus Texas fever is of importance only to importers of cattle from non-infected countries.

The Bureau of Science is now installed in its new building, erected and equipped at a cost of a quarter of a million dollars. Much research work is being done in this bureau. A stock of anti-rinderpest and anti-tetanic serum, also mallein, are always on hand.

We point with much pride to our public abattoir in Manila, which from a sanitary standpoint is unexcelled by any other similar institution in America or Europe. Daily killings at the abattoir are about 150 hogs and 75 cattle.

It is a large structure supported by massive pillars and without walls. It has a stone floor throughout, which is well drained and sewered. It is electric lighted, and, being without walls, is perfectly ventilated. The floor of the adjoining corral is also of stone, and the entire premises, which are operated under the supervision of an experienced American, are kept in an absolutely perfect sanitary condition, and are thoroughly washed and disinfected daily.

Every employé of the abattoir who has to do with the killing of animals or the dressing of carcasses is required to "line up" immediately before the daily slaughter, and his clothing, hands, arms, and limbs are inspected. If his much abbreviated wearing apparel is dirty, or if there be sores or filth on his body, he is ejected from the premises.

Condemned carcasses and parts of carcasses are sent to and disposed of at the crematory, and the superintendent of that institution gives receipt for them. This receipt must tally with the inspector's report.

Cattle are killed by pithing performed by expert Filipinos and hogs are slaughtered by stabbing done by Chinese.

A veterinarian, assisted by a qualified native, is detailed to make ante-mortem and post-mortem inspections. The diseases for which animals have been condemned at the abattoir are: rinderpest, tuberculosis, Texas fever, hæmorrhagic septicæmia, hog cholera and cysticercus cullulosa. The *Fasciola hepaticum* is invariably found in large numbers in cattle imported from China.

Upwards of 3,000 cattle are imported monthly from China, Indo-China, Straits Settlements, Borneo and Australia. A rigid system of port inspection is maintained directly under the supervision of the Chief Veterinarian.

The Veterinary Corps was transferred from the Board of Health to the Bureau of Agriculture, as a part of the Division of Animal Industry, in September, 1905.

The writers of this article have made no attempt at this time to dwell upon scientific details; but rather by presenting this brief outline, hope to enlist the attention of our fellow veterinarians in the Homeland to conditions presented in our far-away Insular possessions.

A CANINE CEMETERY.—Wooster, Ohio, it is claimed, has the only regularly laid out and platted cemetery for the exclusive burial of dogs in the world, and likewise has the first official dog funeral director. The City Council recently bought a plot of ground and appointed Andrew O'Brien sexton to look after the interment of all dead bowwows claimed or unclaimed. O'Brien has gone ahead and laid out the cemetery. In his announcement Mr. O'Brien states that there will be no Sunday funerals, nor flowers permitted at any time. Schedule of prices, which includes digging of grave and lot, small dog or pup, 50 cents; good sized dog, 75 cents; a dog that has been a good while dead, $1; a dog that has been dead so long that lime and embalming fluid is necessary, $1.25.

HYPODERMIC AND INTRAVENOUS MEDICATION.

By N. I. Stringer, D. V. S., Paxton, Ill.

Read before the Illinois State Veterinary Medical Association, July 12, 1906.

I have not chosen this subject in order that I might reveal any startling revelations, but more that we may all gain much valuable knowledge from the discussion that I hope will follow.

First, I wish to make a few quotations from Bourneville and Bricon's "Manual of Hypodermic Medication," by G. Archie Stockwell, M. D., F. Z. S.: "The introduction of a needle into the body as a therapeutic measure has been in vogue for centuries in the Orient, and was introduced into Great Britain and Europe in 1670, though it met with little favor until 1810, when Berloz revamped the procedure. Intravenous injections generally obtained in the seventeenth century, but whether a hollow needle bearing medicaments was ever employed for medical purposes is questionable. Endermic medication, however, was taught by Lambert. For the strictly hypodermic method, however, aside from the physiological experiments of Magendie and others, we are indebted to Doctor Alexander Wood, of Edinburgh, Scotland, who employed morphia solutions subcutaneously for the relief of neuralgia as far back as 1843, though such procedure attracted little attention until about 1855."

Since 1855–56 the hypodermic system has steadily grown to the rank that it now holds.

I need not describe how to use the hypodermic method more than to state that proper sterilizing of the syringe, needle, point of injection, etc., is necessary to success.

A short article by Dr. Middleton, A. B., D. V. S., Philadelphia, Pa., in the American Veterinary Review, Vol. XV., page 391, describes the hypodermic uses of the following named drugs: æther, amyl nitris, antipyrin, apomorphine hydrochloric, atropin sulphate, camphor, morphine hydrochloricum, pilocarpine hydrochloric, pilocarpine-eserine, ergot, strychnine sulphate, thallium sulphuricum, veratrum. I have used some

of the above-named drugs hypodermically with varying degrees of success.

When we place a drug into the living body in a manner that will insure its absorption we can usually expect to get its physiological effect whether or not we have made a proper diagnosis and obtain a proper or improper result.

Much more caution should be exercised in using drugs hypodermically than orally or otherwise. A knowledge of the physiological action of the drug used should be well understood.

"The physiological activity of nearly all drugs, more especially narcotics and those that possess direct action upon the nerve centres, is from three to five times more active when administered hypodermically than when given by the mouth."

The solution should be as nearly neutral as possible. Drugs in suspension should not be used.

The following are a few of the drugs that may be and are used in veterinary practice:

Aconitine.—Used with caution. I have seen very alarming symptoms from 1/20 grain, such as shivering, pupillary dilation, sweating, extreme salivation, nausea, effort to vomit, convulsions, muscular twitchings, motor incoördination, muscular paralysis, etc.

Alcohol may be injected with safety as a stimulant.

Amyl Nitrate a powerful sedative and antispasmodic. It lowers temperature by ozoning the blood, thereby checking oxidation, and relaxes the arterial system, greatly reducing arterial pressure. Said to be good in tetanus in one-half to one drachm doses. I used it in one case and believe I obtained good results. It should be freshly made, which is almost out of the question for the country doctor to get it just when he needs it.

Aqua pura sometimes serves for local anæsthesia.

Agenti Nitras, in solution (20 to 40 grains to the ounce of distilled aqua), 10 to 20 minims in several places over an atrophied muscle.

Atropine, 1/4 to 1 grain. It is said that very little atropine is to be found on the market, the drug being sold as such being hyoscyamine.

Chloral Hydrate will often leave abscesses and sloughs.

Quinine will often leave indurations, also abscesses and sloughs.

Cocaine, for local anæsthesia, abscesses from its use sometimes occur, possibly due to infection from the needle or a decomposed solution; unless used as soon as prepared phenol or boracic acid should be added to it.

Stovaine is better.

Digitalin, used in all cases where digitalis is indicated. Much swelling and dangerous abscesses usually occur from its use. I would advise leaving it out of the list of drugs to be used hypodermically.

Ergot, fluid extract, one-half to one drachm (P. D. & Co.'s), injected deep into a muscle. Sometimes get considerable induration for several days.

Nitro-Glycerine (1 per cent. sol.), a powerful stimulant, 10 to 30 minims.

It is not worth while to take more time to mention many more drugs that you are all familiar with.

I wish to say a little about intravenous medication, and I trust I may gain valuable information from the experience of some of you whom I know have given this method a thorough trial. I do not wish to advertise or condemn any proprietary remedy, but I shall have to mention two or three.

Tallianine.—I have to say that this season's work has caused me to lose faith in the remedy as being better than ordinary oral medication. I think that with what little experience I have had, *Nuclein* solution will do all that Tallianine will do.

P. D. & Co.'s Influenza Antitoxin, I failed to get any good results from. Others tell me that they think they have. It has been used but very little by the profession, and it is too early yet to give it its proper place.

Dr. G. Ed Leach is my authority in stating that 2 ounces of

a 2 per cent. sol. of *Oxychlorine* intravenously will relieve tetanus. I have not tried it.

Barium Chloride.—I used to be a true friend of the drug, but something happened to two or three of my cases a few years ago to cause me to drop it like a hot brick. Fatal results will sometimes occur from seven grains intravenously.

Normal Salt Solution.—I would advise its use in all cases of excessive hæmorrhage. I have injected three quarts into the jugular, and received the desired result. I have not tried it yet in azoturia, although I have tried about every other highly recommended treatment. But from a theoretical standpoint, it looks to me that the abstraction of about a gallon of blood, and the amount replaced by normal salt solution, would be good treatment.

Collargolum, 2 per cent. solution, dose 2 to 3 ounces intravenously. Indicated in all septic cases. I have just given it a trial in a case of morbus maculosus, but not a fair test. In the first place, the case looked to be a hopeless one. The case had been one of three or four days' standing when I first saw it. Tallianine first day and collargolum, 80 grains, divided between the succeeding five days. Colic complication developed after the third day's treatment. This complication invariably means a fatal termination, for it shows that the digestive organs will not supply the proper constituents of the blood, and the battle ground of this disease seems to be in the blood.

This paper has been written at random, but if I should attempt to enumerate all the drugs, their actions and uses, there would be no time for the other papers.

But I wish to say that I am of the firm belief that eventually septic and infectious diseases will be successfully combated by antiseptics and antitoxins through the hypodermic syringe.

THE OHIO VALLEY VETERINARY MEDICAL ASSOCIATION held a meeting at Vincennes, Indiana, on 26th ult. The officers are Dr. J. R. Mitchell, President; Dr. J. W. Moses, Secretary, and Dr. James Campbell, Treasurer.

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."

OSTEOMYELITIS IN A DOG.

By W. Reid Blair, D. V. S., Veterinarian and Pathologist N. Y. Zoölogical Park.

This rather unusual disease affecting the dog has recently been brought to my attention, and, owing to its somewhat obscure nature, I have considered it worthy of special notice. The following clinical history of the case has been furnished by Dr. Frank H. Miller, whose case it was.

Jan. 17th was called by Mr. Whitehead, 29 E. 74th Street, City, to examine a six-year-old male English setter that had gone lame. Mr. W. said dog had been suffering more or less from lameness in left front leg, but for the past two days was extremely lame in hind leg of same side. When seen by me he was lying on a comfortable bed, and made efforts to greet me, and arise, which he did with great difficulty, holding the left hind leg stiff. When caused to walk, he showed to be lame both in the hind and fore leg of the left side, mainly in hind, however. Movement was painful and hobbling in character and increased the respirations (pain breathing). Upon examination for rheumatism, especially rheumatic joints, which I fully expected to find as the cause of most of the trouble, I found to my great surprise that the stifle joint as a joint was apparently normal. It was flexed and extended without evidences of pain. Same applied to manipulations of the humero-radial and scapulo-humeral joints. Great pain, with howling, was evinced when the shaft of the femur, and to a lesser extent the tibia of the side in question were palpated or compressed. I could not convince myself that enlargement of the bones was present; but the more particular examination led me to believe the pain was due to a deep-seated bone condition rather than to an acute periostitis.

This held true for the closer examination of the radius and humerus of the same side. I could not find that the bones of the other side were involved from such manipulation. Temperature was but slightly elevated and appetite was modified owing to the pain.

I learned from the owner, that early in life some slight accident occurred to the dog's head, which he thought had accounted for a tendency to prolapse of the lower eye-lid, and slight ptosis of superior lid of the right eye.

Treatment :—Ordered ¼ grain morphine sulphate three times daily, by mouth, to allay pain. Hot cloths, the rubbing of the parts with a stimulating liniment, the active element of which was oil of wintergreen, three times daily. He was also given internally elixir pepsin and bismuth and syrup hypophosphites comp.

My opinion was that it was the initial stages of rarefying ostitis, but the unilateral aspect troubled me. Prognosis bad.

Jan. 21st: Visited case and found the patient taking more food and nothing the worse, food being retained.

Jan. 24th: Case most decidedly improved, especially in ability to get around, and soreness of the bones much less, even with less morphine being given. Began to feel hopeful that a recovery would be scored.

Feb. 2d: Again called, as dog was rapidly growing worse. Found him losing ground rapidly. More pain in limbs on pressure. More difficulty in raising himself and great difficulty in walking. Other limbs, while not decidedly painful to the touch, were weak and tottering. Dog had almost ceased to take food.

Feb. 7th: The dog's condition had become so bad that I chloroformed him. The amount of chloroform required was slight.

I could not trace any history as regards breeding, feeding or housing which would tend to dispose to this or any other illness.

In the latter part of his illness the musculature of the legs shrank almost incredibly.

Gross Examination :—The external surface of the femur stripped of muscle and fascia, presents numerous grayish red smooth granulations throughout its entire length. These vary in size from a pin's head to that of a small pea ; are not easily separated from the bone, and present a fairly close resemblance to miliary tubercles in other parts. These granulations are not as hard as normal osseous tissue, but generally of the consistency of articular cartilage. Some of them present evidences of partial calcification ; this, however, is not particularly marked excepting at centre of the shaft, where the granulations are most abundant. The periosteum is somewhat thickened, but no portion shows any evidence of extensive suppurating foci.

Upon cross section through the centre of the shaft, no great variation from the normal is noted. Perhaps the compact external plates may be considered as somewhat thinned and the marrow space slightly increased.

On longitudinal section the thickness of the bone varies, the endosteum is thickened and hæmorrhagic; there are several cyst like cavities in the medulla, and the marrow does not contain its normal amount of fat, but is largely replaced by fibrin, which is streaked with blood.

Microscopic Examination :—Cross sections through the shaft of the bone show extensive pathological changes. The periosteum is much thickened, adherent, and shows circumscribed areas of necrosis surrounded by granulation tissue. These areas of necroses correspond to the numerous miliary tubercles noted on gross examination.

The vessels extending from the periosteum into the bone are surrounded by new cellular tissue, which causes an enlargement of the canals. The Haversian canals are much enlarged, contain numerous large mononuclear and multinuclear cells (osteoclasts). Numerous irregular branching channels which appear to be due to the enlargement and coalescence of the lacunæ and canaliculi are present throughout the actively diseased sections. The tissue replacing the absorbed bone consists of small spheroidal cells and new-formed fibrous tissue. The cancellous bone tissue is greatly diminished, and is largely replaced by dense masses of granulation tissue. The bone marrow shows great diminution of normal fat cells, an increase of fibrillar connective tissue, and areas of small hæmorrhages are present throughout.

It is of special interest to note that the foregoing pathological changes are very characteristic of the disease of osteomyelitis as seen in the human subject.

PLENALVIA IN A HOLSTEIN COW.*

By ALBERT BABB, A. B., M. D. C., Springfield, Ill.

My patient is a favorite animal belonging to Mrs. R., a widow, one of my wealthiest patrons. The history of the case is that the cow had been dull and had eaten nothing for about twenty-four hours. Prior to that time she had been fed night and morning liberally on malt and oats and had the run of a good pasture. The owner believed the attendant had been

* Presented before Illinois State V. M. A., at Bloomington, July 13, 1906.

feeding too many oats, stating that malt and grass had never given trouble before. My first visit was at noon, June 1st. The rumen was packed with food, the cow stupid, the pulse seventy per minute and the temperature normal. There was no meteorism worth mentioning and no perceptible borborygmi. The digestive machinery was evidently at a standstill. She got ℥ iij barium chloride, ℨ ss fl. ex. nux and ℨ i sp. ammon. aromat. I left a quantity of the last mentioned drug and instructed the attendant to give an ounce every two hours. The owner, being very anxious for quick results, requested me to call again that day, which I did at 5.30 in the evening. No material change was noted at that hour and she got ℨ x ol. lini and ℥ vj gamboge. At 9.45 A. M. next day she was more stupid and reluctant to move, but otherwise apparently much in the same condition. She then got ℨ xxvj ol. lini, ℨ ss fl. ex. nux and lb.j common salt. The aromat. spts. ammonia was continued.

I had an out-of-town call and did not see her again till 11 P. M. of the same day. She was pretty much the same, but certainly no improvement had taken place. I gave arecoline hydrobromate, gr. jss, by needle, and barium chloride, ℥ iv, by drench, and as she was somewhat tympanitic, tapped her. On June 3d, at 10 A. M., she got arecoline, gr. jss, barium chloride, ℥ iij, and the aromatic spirits of ammonia was continued. Other professional work preventing, I could not make my evening call on her till 9.30.

On beholding her I was astonished. She was showing much dyspnœa, due to having ingested a large quantity of water during the day; the rumen was greatly distended with it and the food, and there were plain symptoms of exhaustion and collapse. Still the temperature was normal; the pulse, however, was about 120 per minute. She was about the most forlorn looking bovine I ever beheld. What was to be done? I gave an unfavorable prognosis to the attendant, but remarked that I would do the best I could. She got gr.ij arecoline, ℥ iv bar. ch., and ℨ ss nux was left for the night.

For five days she had passed no fæces and anorexia was complete. Next morning she was much brighter, her bowels were moving freely, and she showed a little appetite. Being busy, I did not call till 3.30 P. M.; she was still purging freely and had shrunk amazingly. Her pulse was then about 60 per minute. I left some more aromatic spirits of ammonia, also some acet. fl. ex. nux. That was my last visit to her, as her

recovery was rapid and uneventful. Arecoline and barium chloride had served me so well in such cases before that I was surprised at the slowness of this one.

RUPTURE OF THE HEART.

By MARTIN R. STEFFEN, M. D. C., El Paso, Texas.

A bay gelding, eight or nine years old, one of a team on a Wells Fargo express wagon, eats a few mouthfuls of his feed in the morning, but leaves the greater portion untouched. He is hitched with his mate and starts on his regular route, but is returned to the stable within half an hour because of severe dyspnœa, and spasmodic coughing and retching. The veterinarian is called and finds the horse as described above—coughing, retching and breathing spasmodically. The horse is taken to the hospital and choke diagnosed. A rounded mass appears in the middle third of the neck, and apparently in the œsophagus. After an hour froth mixed with a few food particles runs rather freely from the nose and the retching increases. The neck in the region of the choke is massaged for an indefinite period, and morphine given hypodermically. About noon a stomach tube is passed through the nostril, but cannot be gotten farther than the location of the swelling on the side of the neck; water is forced into the tube, but returns, and the tube is withdrawn; a few food particles are found on its end. Shortly after passing the stomach tube the animal appears intensely bloated and is at once tapped, which seems to afford relief. Nothing further is now done in the way of treatment, and the animal is turned into a clean corral with fresh water in reach. In a few hours the animal has a severe spasm, affecting apparently his entire body; his left pectoral limb seems to be paralyzed, and he begins to stagger and goes down, remaining in the recumbent position probably twenty minutes, when he again staggers to his feet and appears very much at ease. The retching and coughing fits are gone and his case appears hopeful. About eight o'clock he lies down without violence and dies with only a few struggles.

The post-mortem reveals the œsophagus clear of obstruction, but in its middle-third is an inflamed area about four inches long.

The heart is the seat of two ruptures, one about the size of a dime, situated at the apex of the left ventricle; the other, a ragged rupture about three inches long, higher up in the left ventricle. Other organs apparently normal with the exception

of a congested area in the cæcum around the point of entrance of the trocar.

[NOTE.—Heart rupture probably due to excessive straining. Operation described in June REVIEW by Dr. Merillat, page 386, would have saved this animal.—R. R. B.]

RHEUMATISM (?)

By MARTIN R. STEFFEN, M. D. C., El Paso, Texas.

An aged gelding, weighing about 900 lbs., makes his daily route on a delivery wagon. The next morning he is found extremely "sore" and very much "tied up" all around. The veterinarian upon his arrival finds him in a condition very much resembling tetanus, and at first glance mentally pronounces it such. Upon closer examination, however, this idea is dispelled and a positive diagnosis is not arrived at. The patient refuses to move, appears drawn in the flank; the slightest movement causes spasms of the entire musculature, but the membrana nictitans is passive.

Critical examination reveals absolutely nothing of importance. A rectal examination is now made, but brings no new light. The patient is given morphine hypodermically and left for the day. On the second day no change has taken place, and morphine is again given. On the third day the patient appears worse, and is put on treatment for rheumatism, in which phenylis salicylas figures chiefly. In three days the patient is quite supple, and a few days later is again in harness.

A NEEDLE AND THREAD IN A CAT'S JAW.

By R. A. STOUTE, D. V. S., Barbados, West Indies.

Some days ago a cat was brought to my infirmary, with the following history: About 5 P. M. the day previous, the cat ate its dinner all right. About 9 in the same evening it was unable to lap some milk. The owner attempted to feel the throat, with her finger, the natural result being that she was badly bitten.

I made a careful examination but could not find any foreign body in the throat. I then examined the mouth, and found a small red streak running along the inner side of the lower part of the jaw. Finding nothing else wrong, I decided to examine the outer surface. In doing so I found a very small hard spot on the inside of the left jaw. I opened the spot, and, to my surprise, extracted an ordinary sewing needle, with about three inches of cotton attached.

CONTRIBUTION TO THE RECORDS OF FECUNDITY.

By F. P. Scott, M. D. C., Oxford, Indiana.

In the Review for May, 1906, page 223, reports of two remarkable cases of fecundity, in the cow and ewe respectively, are given. In October, 1905, my driving mare was very badly frightened by an automobile. Thirty-six hours afterwards she aborted three foals. This is the greatest number of which I have heard, though it may be common enough, nevertheless.

Dr. Mayo's Work in Cuba.—Dr. Nelson S. Mayo, Chief of the Cuban Bureau of Animal Industry, recently spent a week in Jamaica, W. I., studying the conditions and breeds of cattle in that island, with an eye toward importing into Cuba those which would apparently thrive there for beef and dairying purposes. The Kingston *Gleaner*, in an interview with Dr. Mayo, quotes him as follows: "I have come here to study the live stock industry of Jamaica, because we are almost in our infancy in Cuba with regard to the better kinds of live stock. The cattle industry of the Island was practically destroyed during the war of 1895-98. Before the war there were 2,500,000 head of cattle in Cuba. At the close of the war only four per cent. of that number remained. At the present time there are over 2,000,000 head of cattle in the Island, and within the next year we will probably reach the number which we had before the war. The Cuban Government is very desirous of introducing the best breed of live stock that seem to be adapted to tropical countries. We expect in a very few years to export beef, and, of course, we are preparing to compete in the world's markets. And for this reason we are introducing the Herefords, Shorthorns, and Aberdeen Angus as beef cattle and the Jerseys and Holsteins as dairy cattle. We are going to introduce jacks and jennets for the purpose of breeding mules. The use of mules is increasing very rapidly, and to quite an extent they are replacing working cattle in the modern methods of agriculture. I am going to look at the East Indian cattle here—the Mysores—with a view of introducing these in Cuba on trial. We are now experimenting in the manufacture of butter and cheese with very good results. We are also manufacturing a vaccine against anthrax and against black-leg in cattle, which we furnish free to the citizens of Cuba for vaccinating their cattle. And further, we are looking after the contagious diseases of the animals and their suppression."

SURGICAL ITEMS.

By Drs. Louis A. and Edward Merillat, Chicago, Ill.

AN UNUSUAL CASE OF BRACHIAL PARALYSIS.

The subject was an aged 1100-pound mare, presented for treatment with the complaint of inappetence, running down in flesh, and disinclination to pull loads or travel as before. The state of ill health dates back about a month, previous to which time she was said to have been a lively, well-nourished working animal. There was no history of a fall or injury of any description and the physical examination revealed no organic derangement. No diagnosis was made at the time, the state of ill health being attributed to old age. On a certain day about one month after the above described illness began, and while driving leisurely in a butcher's wagon, she became suddenly lame, in fact the left fore leg collapsed so completely that it was with the greatest difficulty that she was half dragged to a neighboring stable. An examination several hours later revealed a typical case of brachial paralysis. The truth of the driver's statement, that the animal had neither slipped nor

Fig. 1.

Fig. 2.

Fig. 3.

fallen was at first doubted, but the examination post-mortem showed that he had evidently told the truth.

The mare was removed to a convenient place for photographing and for the post-mortem examination. Fig. 1 shows the position of the paralyzed limb, typical of the disease. The foot is forward, the carpus is flexed and the olecranon is dropped to the level of the middle of the opposite radius. The caput muscles are limp. The revelations of the post-mortem examination are shown in Figs. 2 and 3—the first was fractured at its upper third. The rib was found to be easily pulled forward against the brachial nerves by traction on the scalenus muscle, which brought the segments to the angle shown in Fig. 3.

There was a slight accumulation of a yellowish congealed serum at the seat of fracture and a considerable extravasation of bloody serosity in the immediate surroundings. The rib was denuded of its periosteum for a distance of one inch in each direction from the point of fracture, which gave it the appearance of a polished bone. The denuded surface was in fact as smooth as a piece of bone could be made by polishing. There was no evidence of reaction to form a uniting callus except at some distance from the fractures, where several soft cartilaginous nodules had formed. The tendency to heal was indeed meagre. The fractured ends had been rounded by friction. They were serrated into several tooth-like projections that preserved the apposition of the bone for a time.

From these presents the case is very easily explained: The mare evidently sustained a *fracture without displacement* of the first rib, which brought about the state of ill health, and at a certain moment about one month later, the fracture, which had made no progress toward healing, was suddenly dislocated by a slight stumble or sudden elevation of the head, unnoticed by the driver.

The relations of *fracture of the first rib* to *brachial paralysis* have not been satisfactorily demonstrated. It has not been shown exactly how frequently the latter is caused by the former. Some writers have not associated them. For example, Cadiot and Almy in their new work ignore this feature of the disease entirely, although all other phases are mentioned and described in detail. Only a few of these cases seem to have been properly investigated, but from evidence gathered here and there from our own observations, we opine that fracture is very frequently the cause. It is also quite certain that the frac-

ture is sometimes sustained without falling. The violent traction of the scalenus muscle on the rib as a horse makes a desperate effort to recover from a bad stumble, has, to our own knowledge, caused the rib to fracture in at least two cases. Whether there existed a rarefying condition of the bones to predispose, was unfortunately not determined.

ONE NIGHT RECORD OF AUTO ACCIDENTS.—Mounted policeman run down by auto in Bronx; he and woman dying; two others hurt. . . . Two killed, four hurt in collision between auto and farm wagon in Queens Borough. . . . Two girls run down by auto on Broadway; one dying. . . . Doctor and wife thrown from auto when hit by trolley car at Sixth avenue and Twenty-eighth street. . . . Miss Ellen Wray thrown from cab at Sixth avenue and Twenty-second street when, avoiding auto, cab was hit by car.—(*N. Y. American*, *Aug. 10.*)

FIND A HORSE 30 FEET LONG.—*Lander, Wyo., July 19.*—The fossilized skeleton of a giant horse has been discovered in the Big Sweetwater divide fossil beds by archæologists. The discovery overthrows the accepted theory that the horse was evolved from a small animal which is found in the Wyoming fossil beds. This skeleton is 30 feet long and fully as tall and is in an excellent state of preservation. It was an herbivorous animal and the jaw bone displays powerful grinders, which are but little decayed. The Chicago University and American Museum have been notified and both have announced their intention of starting archæologists for the scene of the find. There are a dozen different parties of scientific men searching the fossil beds this summer.

PRICE OF CARRIAGE HORSES.—The New York *Herald* of Aug. 12 is the REVIEW'S authority for the statement that dealers are paying $1000 for trotting-bred carriage horses in the rough —the same class of animals that brought $500 five years ago, before the automobile became a factor in pleasure transportation. If the devil wagon keeps increasing in numbers, the fine carriage horse will reach prohibitive prices. From recent statistics, however, autos are being thrown upon the scrap heap about as rapidly as they are being produced by the myriads of manufacturers. When purse strings tighten at the next Presidential election, watch the "bubble" manufacturers burst. The people are making money so fast that they must have some expensive fad upon which to expend their wealth.

ARMY VETERINARY DEPARTMENT.

THE VETERINARY SERVICE OF THE UNITED STATES ARMY AND THE MILITARY VETERINARIAN.*

By CHAS. H. JEWELL, Veterinarian, 13th Cavalry, U. S. Army.

History of the Veterinary Service in the U. S. Army.—This branch of the military service is one which in times past has received less consideration from the War Department than any other part of our small but efficient army. Whether it be for lack of importance in the eyes of the War Department, prejudice toward the profession as it was practised in times past, or being too busily absorbed in the fighting constituents of the military body, are questions which, being unable, I will make no attempt to answer, and will allow my hearers to draw their own conclusions.

During the Civil War there were no veterinarians employed in the Union army, such work being done by the troop farriers. This lack of proper veterinary service has often been commented upon as resulting in the loss of thousands of dollars' worth of horses which might otherwise have been saved to the Government. This was well illustrated during the Civil War, when for lack of proper care the cavalry service became so badly crippled that it became necessary to establish camps for the recuperation of the sick and disabled animals. Had there been veterinarians to look after these animals the greater number of them could have been kept at work and in this manner greatly improved the efficiency of the cavalry service.

After the Civil War, Dr. Tempany, now of the 9th Cavalry, who was then an enlisted man, was chosen from among the troop farriers stationed at Carlisle Barracks, to act as post farrier, assuming the duties of veterinarian. He was classed as an extra-duty man, and received the extra compensation of fifty cents per day, making his salary about thirty dollars per month exclusive of clothing, rations, etc. He was furnished chests of proprietary medicines, supplied to the Quartermaster's Department by one Dr. Enos Sanders. This marked the beginning of the veterinary service in the army.

Dr. Tempany, to whom I am indebted for the data of this early history, is still in the service, at the age of 68 years, hav-

* Presented at 43d Annual Meeting of the American Veterinary Medical Association, at New Haven, Conn., Aug. 21-24, 1906.

ing served 40 years as enlisted man and veterinarian, about 31 years in the latter capacity, and is as yet denied retirement, there being no such provision under the present law.

It was not long after the above start was made that regular veterinarians were appointed, with the titles of Senior and Junior Veterinarian, the senior to receive $100 per month and the junior $75, with assimilated rank of sergeant-major, receiving quarters and allowances of the same kind. These titles of seniors and juniors were for the new regiments formed at that time (7th, 8th, 9th, and 10th Cavalry). The veterinarians of the other six regiments drew $75 per month. It was not required that these men be graduates of veterinary colleges.

At this time the supply of drugs was limited to 33 different articles, for administering to all the ills that the army horse might be heir to.

Although frequent attempts were made from time to time to increase the efficiency of the veterinary service of the army, the status remained as mentioned up to the time of the reorganization of the army, when, in March, 1899, the present veterinary bill was passed and later amended on February 2, 1901. The original bill of 1899 provided for veterinarians, first and second class. Those of the first class received the pay and allowance of a second lieutenant mounted, while those of the second class received $75 per month with the allowance of a sergeant-major. The amendment of February 2, 1901, did away with this classification, and each now receive the pay and allowance of a second lieutenant mounted. This act provides for forty-two veterinarians, thirty for the cavalry and twelve for the mounted batteries of artillery.

The advancement of the veterinary service in the army has been a constant struggle from the beginning, and we can safely say that, had it not been for the efforts of our lamented Huidekoper combined with those of this Association, we would not now have even the present law, which has done much to increase the efficiency of the service, by attracting into the army a class of young men who, by their ability and attention to duty, have made a most favorable impression among the army officers.

That the present status is lacking in so many ways in promoting efficiency and contentment will be shown in the following extract from the head of the War Department, submitted to the last session of Congress along with the bill now pending before that body:

"CALENDAR No. 3531.
SENATE.
"59th Congress, 1st Session, Report No. 3476.

"Efficiency of the Veterinary Service of the Army.

May 11, 1906.—Ordered to be Printed

"Mr. Warren, from the Committee on Military Affairs, submitted the following

"REPORT.

"(To accompany S. 3927)

"The Committee on Military Affairs having carefully considered the bill (S 3927) to increase the efficiency of the veterinary service of the Army, beg leave to report it back to the Senate with the recommendation that it do pass.

"Competent veterinarians are indispensable in the Army, especially in the cavalry and artillery, considered from the standpoint of efficiency of the service as well as economy. Thoroughly competent and up-to-date veterinarians must be in attendance in the purchase of horses, to pass upon the health and soundness and expected endurance of the animals; and from the purchase all throughout the life and service of the animal constant care and watchfulness is necessary to prevent and cure disease epidemic, contagious, or otherwise.

"A good veterinarian can make and save for the Government many times the amount of his salary as compared with the losses through incompetency in the profession.

"This branch of the service admittedly has never been upon a satisfactory basis. Some served with the relative rank, pay, and allowances of second lieutenants, while others served at $75 per month, and two of the most valuable men in the service, who served at the lowest rate, are now serving beyond the age limit usual in army retirement, one being 70 yrs. old and the other 66.

"It has been demonstrated that it is almost impossible to find men sufficiently competent to undertake the duties who will accept the pay and allowances of a second lieutenant, with no prospect of promotion, no increase of pay for foreign service, no commutation of quarters, no retirement with pay, and no pensionable status, and under the present law a veterinarian is neither a commissioned officer nor an enlisted man.

"The following letter from the honorable Secretary of War,

recommending the passage of this bill, gives the present situation and the changes sought through the enactment of the proposed measure:

"'WAR DEPARTMENT,

"'WASHINGTON, January 27th, 1906.

"'SIR: I have the honor to transmit herewith a draft for the reorganization of the veterinary service of the Army.

"'From a memorandum prepared by the Chief of Staff it appears that the primary object of the bill is to remedy the apparently unintentional injustice of depriving the veterinarians of the benefits of the pension and retirement laws and of increase of pay for foreign service. The veterinarian is made by the law a part of the Army, but as he is neither commissioned nor enlisted he is not entitled to the benefits granted officers and enlisted men.

"'Another object is to attract a suitable class of men, thus keeping pace in the service with the advance of the veterinarian in civil life.

"'Young men of good education, graduates of veterinary colleges of good standing, are needed in the service. Their duties include the instruction of young officers and enlisted men. The "horse doctor" of former days is not satisfactory as a veterinarian in the Army.

"'Under the present law each cavalry regiment has two veterinarians and 12 are authorized for the artillery corps, 42 in all. The bill provides one veterinarian for each battalion of field artillery, and as there are 13 of these battalions, the total number of veterinarians is increased by one. Should the field artillery be organized into regiments of two battalions each, the number of veterinarians to the regiment would be the same as in the cavalry.

"'Eight of the veterinarians now in the service have served more than 15 years each. One has 34 years of service and is 70 years old; another 29 years of service and is 66 years old. The proposed measure gives just recognition for faithful service in the past as well as providing for increased efficiency in the future.

"'THE BILL.

"'Qualification for future appointments. The applicant must be a citizen of the United States, unmarried, between 21 and 27 years of age, a graduate of a veterinary college of good standing, and must pass a satisfactory examination as to habits, moral character, mental and physical ability, education, pro-

fessional qualifications, and general fitness for the service.

"'Advancement. For the first 10 years of his service the veterinarian is to receive the pay and allowances of a second lieutenant, mounted (the same as now). After 10 years' service, and upon passing a satisfactory examination, he is to receive the pay and allowances of a first lieutenant, mounted.

"'Tenure of office. The veterinarian is to be on the same footing as a commissioned officer of the Army as to tenure of office, retirement, pensions, and increase of pay.

"'Veterinarians in the service. (1) Those who have served 15 years may be appointed without examination, and any who have so served and are more than 64 years of age may be appointed and retired.

"'(2) Those who have served 10 years at date of appointment are to be examined only once, *i.e.*, if they pass the prescribed examination they at once have increased pay and allowances corresponding to length of service.

"'(3) Any who are not appointed under the proposed measure, *i.e.*, any who fail to pass the examination, or decline to take it, are to be discharged with three months' pay.

"'Expense. Should all line of the veterinarians having more than 10 years of service and the additional veterinarian be appointed under the proposed bill, the increased annual expense would be $2,700.00. The only further expense would arise from the increased pay to which each veterinarian would be entitled after 10 years' service.

"'In the interests of the efficiency of the veterinary service of the Army, I urgently recommend this bill to your favorable consideration. Should your committee, on the consideration of this measure, desire the presence of those officers of the General Staff who have made a special study of this subject for the further explanation of its merits, they will be instructed to report as you may desire. Very respectfully,

"'WM. H. TAFT, *Secretary of War.*

"'The Chairman Committee on Military Affairs,

"'United States Senate.'"

Advantages afforded Veterinarians by the Military Service: —To those who enjoy traveling there has been every opportunity since the acquisition of the insular possessions, and this is the means of a broad education which one can not appreciate who has never had the opportunities. In this way one comes in contact with people of the various parts of the world and must necessarily become broader minded.

Our veterinarians who have served in the Philippines have had good opportunities of studying the various tropical diseases, and it has proven to be of untold value in saving to the government thousands of dollars worth of horses. Examples of our ignorance of these diseases were manifested during the Spanish-American war, and resulted in great losses of animals.

The army veterinarian has plenty of time for study, recreation, etc. On this account, along with the open-air life, it is one of the most healthy occupations one could choose.

The associations are, as a rule, of a pleasant nature, due to the fact that the whole service has a personal feeling for its members, and if one proves himself worthy he will never lack for friends, whether it be in prosperity or adversity. Our associates are, as a rule, men and women of refinement and education and reared in the best families of the land. Under such influence, a person is bound to develop in every way possible.

In times of sickness one is cared for by the best obtainable medical assistance, and pay does not cease as in the case of men in civil life. The charity of the army is well shown in the cases of our old colleagues in the service, who, being unable to retire under the present law, are held in the service and their burdens made as light as possible until such time as they may be retired. Their case is in strong contrast to what we all see so often in the case of our large corporations, who fill the places of all their employés just as soon as they begin to reach the decline of life.

Each year one veterinarian is chosen to represent the army veterinarians at the American Veterinary Medical Association, and his expenses are defrayed by the War Department, through mileage allowance provided for officers traveling under orders, this being done to enable the military veterinarians to keep abreast of the times with any advancement of the profession.

The Disadvantages Incident to the Military Service:—The disadvantages in many ways offset the advantages above set forth, and, since my paper is to be one of plain facts concerning the service, I will as fully describe them.

A permanent residence is denied a person in the military service, and one is unable to settle down in a place most suitable to his individual likes. This would be a serious objection to those who are fond of a permanent home.

The army veterinarian is greatly handicapped in the performance of his work, due to lack of authority, which exists under the present law, since his only real authority lies in his

commanding officer. If he be a liberal-minded man he is given full power to carry into effect proper methods for the care of the animals under his charge. But if, on the other hand, this power be vested in a person of radical ideas or lacking experience, one can accomplish but little good.

Under the ambiguity of the present law, we are deprived of many privileges which are justly due us and I believe were intended for us, such as the extra ten per cent. for foreign service and commutation in lieu of quarters when such are not available. The army regulations provide for commissioned officers only and since we are not commissioned the comptroller ruled us out of the same.

There is no advancement or retirement for age or disability. These injustices naturally breed a spirit of discontent among the army veterinarians.

Since prestige in the military organization comes only through being commissioned, one can readily see that we must necessarily lack this important qualification both among the officers and enlisted men.

The Needs of the Service:—The needs of the service are many, and are so conceded by all liberal-minded men, but "all things come to him who waits," and the army veterinarians have waited and will in all probabilities wait a long time, before an ideal service be established.

In order to receive the greatest benefits from the veterinary service, it should be organized as a separate corps with a head, similar to the Medical Corps, with rank or its equivalent, if such be possible, and the remuneration which such would call for. Men should be enlisted for this corps and be given rank similar to that given noncommissioned officers of the line. As it is at present, the farrier is under the directions of his troop commander, and he is made and relieved at this officer's will, and it often happens that a farrier is no sooner trained to his duties than he is made a noncommissioned officer. To this we do not feel like objecting, since it is an advancement for him which he otherwise cannot obtain while acting in the capacity of troop farrier.

The same can be said of the troop horseshoer.

The service is greatly in need of veterinary hospitals, built on modern ideas, with permanent assistants in attendance. We have one in the United States, and this is in connection with the School of Application at Fort Riley, Kansas. The work accomplished at that place should bear fruit in a way that they may

be established at all the larger posts throughout the United States and Philippines.

In connection with the needs of the service, a few words in regard to the class of men desired in the military service will not be out of place, and at the same time, give those who have a desire to enter the service some idea of what is required of them. In no other walk of life is so high a standard set upon education and refinement as that for an official position in the Army, and since the veterinarian is now considered in this class he is expected to fill the position in every detail. If he lacks these qualifications, the army life would be unbearable, owing to the fact that his associates, being men of this type, would not fraternize with him.

The Requirement Necessary for Entrance into the Veterinary Service of the U. S. Army:—The applicant shall pass a physical examination and come up to the standard required of a recruit. He shall be a graduate of a recognized veterinary college having a three-years course, with at least a six-months session each year. He must furnish evidence of a good moral character and aptitude for the service. The latter to be judged by the board of officers appointed to examine him, and he is obliged to pass above sixty-five per cent. in each of the following subjects: English, including reading, spelling, and grammar; American history; geography, and arithmetic. This makes up the basic examination. The professional examination consists of the following: Anatomy and physiology; materia medica; practice of medicine; sanitary medicine; surgery; meat inspection; pathology; feeding and watering; bitting and saddling; horseshoeing; conformation and soundness. This examination covers a period of eight days, and is most thorough in its nature. It may be said why this thorough examination, with so little prospects for the veterinarian in the army. To those I would state that with the high standard maintained there is bound to be a bright future for the army veterinarian and we have renewed hopes after the recommendations made by the Secretary of War, Hon. Wm. H. Taft. Should we get this modest allowance it will be a stepping-stone toward future advancement.

The Pay of the Army Veterinarian:—The salary of the army veterinarian is not one to enable him to live in luxury, although one can live nicely, if he does not aspire to high social attainments. Like all other public officials, the army officers are underpaid, when it is taken into consideration the position they are supposed to uphold in the social world, and since the

possession of the Philippines, the travel necessary makes an increase of living expenses, and if a man has a family, his salary is inadequate. The pay of army officers was fixed years ago, when the price of living was about one-half of what it is to-day.

The salary of army veterinarians is fixed by law and consists of the pay and allowances of a second lieutenant mounted, which is $1,500 per annum with increase of 10 per cent. each 5 years up to 20 years, quarters, feed for two horses, commissary and quartermaster privileges included. The latter includes the privilege of purchasing supplies at wholesale prices. Under this provision a veterinarian of 20 years service draws $2,100 per annum, quarters, etc., which in civil life would be considered a very good compensation. Each year he is allowed one month's leave with full pay, or it may, if not taken yearly, accumulate until at the end of four years, four months is allowed.

The Work of the Army Veterinarian.—The duties of the military veterinarian are as a rule very pleasant to one who takes pleasure in his profession. Garrison work consists in the daily visit to all the stables and giving directions to the farriers or stable orderlies, for the treatment of the sick or injured animals. The ordinary work can be entrusted to these men in the same manner as a physician entrusts his patients to the trained nurse, whereas all difficult operations are done by the veterinarian personally.

In the Army we have a training school for farriers and blacksmiths, located at Fort Riley, Kansas, which is a model institution. This school is under the directions of the commandant, Colonel E. S. Godfrey, 9th Cavalry. Captain Walter Short, 13th Cavalry, director; Captain Wm. J. Snow, Artillery Corps, secretary; four veterinarians as instructors, Drs. Plummer, Willyoung, Dowd, and myself; and one assistant instructor, Mr. Frank Churchill. Dr. Dowd is a civil service veterinarian, and has charge of the instruction in horseshoeing. The course is of four months' duration, with two classes a year. The farriers are taught the gross anatomy and the common diseases and injuries which the army horse may be subject to. The instruction is both practical and theoretical. The theory is taught from a farriers' handbook, entitled "The Army Horse in Accident and Disease." Practical work is taught at the large new veterinary hospital. The horseshoers are taught in the same manner, a companion text-book being used, entitled "The Army Horseshoer." Both of these text-books were compiled by the instructors and published by the War Department.

I ask pardon for dwelling at length upon this school, but since it is to all practical purposes an army veterinary institution, and all veterinarians in the service are subject to detail to this school, I deem it of great interest in connection with the veterinary work of the Army. Again, this is one of the places where the military veterinarian is brought more into the light of the Army, by his instructions to the student officers, than at any other post in the United States.

In garrison the veterinarian is usually detailed to instruct farriers and blacksmiths in the theory and practice of their respective work. He may be detailed to instruct the officers in hippology. In the latter case he acts as an assistant to some commissioned officer, usually a captain of the post school staff. The veterinarian not being commissioned, is not eligible as a full instructor to this staff, even though by the nature of the position he fills he should know more about the subject than the instructor under whom he acts.

The veterinarians are detailed upon boards for purchase of horses for the Army, his duties being to pass judgment upon soundness of animals brought before this body.

One veterinarian is detailed as assistant instructor in hippology at the Infantry and Cavalry School, Fort Leavenworth. This position is not regularly changed as is the detail at Fort Riley, and it has been filled for a long time by Dr. S. L. Hunter, of the 6th Cavalry.

Veterinarians are usually required to accompany their respective commands in the field, and must be competent to care for the animals upon the march if needs be.

The military duties of the line are not required of him, yet he may be called upon to take part in reviews and parades, if so ordered by the commanding officer. He is now authorized but not required to take part in target practice, and is given credit for the record made.

The Social Position of the Army Veterinarian :—The social side of army life is of a type peculiar to the military service, and of a very restricted nature. Army people generally are very exclusive in a social way, and, as a rule, do not mingle to any great extent with people of civil life. The social events of garrison life consist of dancing, card parties, entertaining brother officers and their families at dinner parties, etc. The social position of the veterinarian in garrison life is what he is capable of making for himself; if he proves himself to be a gentleman he is so taken by the officers and their families. If

it be otherwise he is completely ostracized, even much more readily than if he were a commissioned officer, for it is assumed that the latter is an officer and a gentleman, whereas the veterinarian must prove himself to be such.

Since society in the Army is governed, to a great extent, by rank, as well as all other things pertaining to the service, it is not expected that the veterinarian would be a social leader in garrison life, yet he and his family are usually shown the ordinary courtesies given other officers.

The old idea existing in the Army that the "horse doctor" was a personage unfit to associate with gentlemen and ladies of high social attainments is gradually dying out, and he is now taken for what he can prove himself to be. Yet, there are still some in the service who cling to the old idea and will not treat the veterinarian as his equal in a social way. With this class, we could only be their equals by being made such by an act of Congress, granting us commissions. I am glad to state that it is but seldom we meet this class in the Army to-day.

Résumé:—In presenting this paper I have endeavored to clearly show the various phases of the position of the army veterinarian, which I believe to be but little understood by our colleagues in civil life; and if, by presenting this article before this enlightened body of brother veterinarians, I am enabled to interest you in our welfare, which ought to be in common with yours, I will feel that I have accomplished something toward a most worthy cause.

FATAL DISEASE OF CATTLE IN TASMANIA.—A disease of cattle closely resembling that known in Australia as "dry bible" has been decimating the herds of Tasmania, and the Government veterinarian, Dr. Willmot, called in consultation Veterinary Surgeon Desmond, of South Australia, and together they made an extensive investigation, holding many post-mortems and taking specimens of the various tissues for microscopical and bacteriological examination. It is in the judgment of Drs. Willmot and Desmond of cryptogamic origin, but the exact source of infection is not known. It results in paralysis, while congestion of the brain and meninges appears to be a rather constant post-mortem lesion. We trust Dr. Desmond, who is a fluent writer and a member of the A. V. M. A., will give the results of his present investigations to the profession. The REVIEW will gladly accord him whatever space he may require for the purpose.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By J. P. O'LEARY, M. D. V., Bureau of Animal Industry, Buffalo, N. Y.

A FEW FORMS OF AUTO-INTOXICATION IN THE DOMESTICATED ANIMALS [*Tierarzt C. T. Hansen*].—By auto-intoxication, or self-poisoning, we understand diseased conditions which are induced by poisonous principles which form in the body with abnormal changes in the body juices, its tissues, or in its secretions. The auto-intoxications which extend from the intestinal canal play an important part in the domesticated animals; however, they are still little known and described. Very frequently a disease occurs in cattle which is characterized as an auto-intoxication extending from the intestinal tract; it affects particularly the nervous system and depresses the sensory and motor functions. For this reason it resembles parturient fever. The disease was observed in cows (mostly old ones) at various times during the period of lactation, likewise in cows which were almost dry and not over 2 months of calving, and in cows in the mediate stage of pregnancy; also in fat cows. The author regards as a cause, a relative overfeeding. The digestive organs are surcharged with a large quantity of rich food, which consists of concentrated feeds, oats, green rye, rich young grass and the like. Thus an animal receives more food than it can digest under normal conditions. As a result, the fermentations and changes of the food become abnormal and the poisonous products of the fermentative changes which are formed thereby are taken up by the blood and affect the central nervous system. This poisonous effect must be of a functional nature, as is proved by the acute course of the disease, for histological changes do not always take place. As to the etiology of the disease, it is said that in years when there is a straw famine the disease is especially frequent, since in the winter in many places where cows receive daily only 2 to 5 pounds of straw feed and also heavily fed upon concentrated feeds and roots. The symptoms vary according to the intensity of the disease and up to the time at which the veterinarian is called in. In severe cases we find the conditions as follows: The owner states that the cows 6 to 12 hours previously ceased to eat and give milk, and after a short time be-

gan to sway. The cows are usually found lying, the expression of the eyes is sleepy, the eyelids droop somewhat, the horns and skin are cold; the temperature registers 35.5 to 37.5°C.; the pulse is weak and rapid: the breathing is not specially accelerated; appetite for food and water absent; the udder is flabby; the peristaltic movement of the rumen is suppressed; the abdomen is bloated, sometimes to a considerable degree, and as the cows frequently make a smacking noise with their mouths and grind their teeth, the owner imagines the disease is due to some obstruction lodged in the œsophagus. As a rule the bowels become constipated. The fæces found in the rectum are of normal consistence, but foul smelling and are here and there crusty on the surface. The rumen is more or less tympanitic. It is impossible to get the animals upon their feet; if they stand up they stagger back and forth and fall down again. In severe cases the cows become comatose, with consequent paralysis of the tongue and difficulty in swallowing. In milder cases the temperature is normal; the horns are somewhat cold; the appetite disappears; the milk secretion diminished; the peristaltic movement of the paunch limited; the left flank somewhat tympanitic; fæcal movements are few; the gait of the hind legs is unsteady, tottering. The differential diagnosis is easy as a rule. As a result of the history we must not confound this disease with impaction of the rumen. The graver cases may be confused with calving fever (parturient paresis) at the time of lactation. With different septic conditions, particularly with such septic diseases of the udder and uterus as produce similar symptoms, a careful examination will soon decide. Sometimes an acute mastitis which is not septic can be accompanied by a similar paresis; still of course this has a different origin. Sometimes cattle are subject to a cerebro spinal meningitis which is difficult of differentiation, but in this case, too, paralysis of the œsophagus is the predominating symptom. The course and prognosis of the disease is favorable by timely and accompanying rational treatment. In a short time the cows will become more lively, and stand up in from 2 to 20 hours and regain their appetite at once, which in the course of one or two days has been rapidly restored. Nevertheless, death may ensue in the course of a few hours, probably the result of cardiac paralysis. In some instances the paralysis may last 2 to 3 days. Treatment plays an essential rôle. The cows must have a good bed of straw, be placed upon the right side and must rest upon the sternum, then covered with warm wet

cloths, which in turn are covered with straw or blankets; besides, they must get at once a powder consisting of 10 grammes of potassium iodide + 100 grammes of sodium sulphate, + 20 grammes of calamus root *(rhizome calami)*, and after the lapse of 6 hours chloride of sodium and bitter remedies in 24 hours. The iodide of potassium seems to possess a specific effect, possibly in the splitting up of the iodine in the digestive canal; it retains its disinfective power for a long time. Occasionally the udder should be treated as in the case of parturient fever. In swine, there appears an auto-intoxication which resembles the symptoms observed in cows, and probably is brought about in the same way. Some of the symptoms resemble the eclampsia preceding or following parturition. Horses are likewise affected with a disease between the ages of 1 to 3 years, particularly in early summer and while out on pasture, also too in the stable and at other times of the year. Its prominent symptoms are a more or less pronounced paresis, particularly in the hind legs. The cause of the disease is very obscure. As the disease appears principally in the early summer and while the animals are out in the pasture, it was thought to be due to a grass poisoning, together with cold night air; that the latter plays a part has been proven. The circumstances under which the disease appears also in the stable, even when grass has not been fed, does not conflict with the above-mentioned theory, for the reason that similar poisonous elements can be formed in the digestive canal by various food materials. Toxic substances forming in the intestinal canal would exercise a specific effect upon the spinal cord. Ray grass, corn stalk, rye poisoning, can be definitely excluded. The disease is absolutely non-infectious. It affects stallions, geldings and mares. A hereditary disposition can be present. In the progeny of certain stallions a considerable number of foals were affected with the malady. It is a disease of foals; it was not observed in horses over 3 years of age, and rarely in these. The disease sets in rapidly, without any premonitory symptoms. As we are dealing with foals, the veterinarian is not frequently called early in the disease. Very often the owner thinks the animals are foundered, as they cannot go backward. The symptoms vary with the gravity of the case. In severe cases the veterinarian is called in immediately; he finds the foal standing swaying on the fore and hind quarters of the body, supported by two or three men. The neck is extended on moving the animal and turned from one side to the other. The foal is not in condition to

move without falling, if not well supported, and when once down it is not able to regain its feet, or until at least after several fruitless attempts. Control is lost over the movement of the limbs, particularly the posterior members. The gait is swaying, tottering, and the knees knock together. If the animal is forced to back with head raised, it usually falls over backward. At other times the foal cannot stand upon its hind legs. The general condition of the health is very good as a rule. Consciousness is not disturbed; the pulse is slightly accelerated; the temperature in these cases remains slightly above 39°C. The appetite is somewhat diminished during the first days. If the animal has lain for some time, there appears now and then symptoms of uneasiness, which are caused by constantly lying. Sensation is diminished in the posterior region, as proved by pricking the parts with a pin. In slight cases the general health is not affected, and the owner has remarked no diminution of the appetite. The movement of the hind legs is uncertain and tottering, especially when the animal is made to trot. The course of the disease is usually chronic; it lasts from months to a year. Yet in grave cases, if the foal cannot stand, death frequently follows (as a result of lying and pressure), in the course of 1 to 2 weeks. Recovery in these cases is dreadfully tedious and we can perceive, as a rule, during the first 6 months an uncertainty in backing the animal, more particularly in wry-necked horses, and there also appears now and then a kind of stringhalt or cramp in the hind legs. The prognosis must be guarded. Of course life can be preserved as a rule, but in quite a number of cases the foal retains a staggering or sliding backward movement for ½ to 1 year; this is particularly prominent in going down hill. When the foal attains the age of 3 to 4 years, it can be sold for full value. This disease cannot be well mistaken for cerebro-spinal meningitis, for with the latter we have accompanying spasms and difficulty in swallowing, and the animal really does not stagger. Severe cases of muscular rheumatism possess a certain similarity to this disease; if the animal lays down it cannot get up, but when it is upon its feet again the gait is more stiff than really staggering. Traumatic injuries to the spinal column which cause paresis admit of exclusion as a rule, partly on the ground of the clinical history and of a close examination of the patient. When foals are tethered a sprain of the neck may result, which may cause similar symptoms, but here a stiffness of the neck may be easily demonstrated. Even similar forms of

paralysis may be the result of various pathological conditions of the spinal marrow; for example: circumscribed tumors, hæmorrhages, or like lesions. Treatment.—Medicinal agents have little value; on the contrary, nursing is of prime importance. In severe cases the foal should always be placed in a stall for two weeks, and should receive an easily digestible, nourishing diet. If it cannot stand it should be raised upon its feet and supported by means of slings, and kept clothed. The medicinal remedies used by mouth, as sodium salicylate and potassium iodide and strychnine, as also the irritants usually applied to the back, have no beneficial effects whatever.—*(Masnedsshrift für Dyrlaeger, 17. Band, September, 1905, Seite 177-188.)*

ITALIAN REVIEW.

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

Papilliferous Cyst of the Uterine Horn in a Bitch, with Extensive Metastatic Diffusion [*Prof. Angelo Baldoni*].—This animal was 11 years old. Up to 1900 she had raised four litters of puppies, but in 1901 all the young ones died, and after a few days she had a swelling on one side of the mammæ, which softened, ulcerated, and healed, leaving a little hard tumor, which had to be removed in 1902. A year after it had returned. In 1904 the abdomen began to get large, the animal lost her appetite, vomited, grew thin, and was brought to Prof. A. B. The abdomen was much swollen and dropped as low as the hocks. A hard body, as large as a man's head, is felt in its cavity. There is collection of food in the abdomen. On both mammæ there are tumors of various sizes. The mucous membrane of the mouth is pale and slightly yellowish, respiration accelerated, pulse quick, temperature 37.7 C. The animal objects to move, and when she is made to her respiration is hurried, while the beatings of the heart are considerably disturbed. The diagnosis of abdominal tumor with effusion was positive, and the nature of the growth suspected by the previous history and present condition of the mammæ. It was cystic fibrosarcoma, which, as revealed by the post-mortem, had spread to the whole organism by metastasis. The condition of the animal was presented to the owner with all the risks to run. An operation was decided upon. The removal of the growth from the abdomen was quite difficult and delicate on account of its size

and adhesions which existed between it, the large portion of the omentum and the right horn of the uterus, which had to be removed with it. The operation was long and tedious, and the life of the patient was threatened while under chloroform, but was finally concluded and the wound closed. During the first four days the case looked doubtful, but the dog resisted and in a comparatively short time was able to go home, where she remained in comparatively healthy condition for a while, but after four or five months had a relapse, and after a few days died. At the post-mortem tumors of the same nature were found in almost every organ of the abdominal and thoracic cavities. The tumor taken from the abdomen weighed 1945 grammes and measured 50 centimetres in circumference.—*(Clinica Veterinaria.)*

ACUTE METRORRHAGIA IN A COW [*G. Blanchedi*].—A cow, six years of age, is sold to a cattle dealer; she is eight months pregnant and in poor condition. The buyer is informed that she is losing much blood by the vagina, drop by drop, and more abundantly while being milked. This loss of blood does not seem to interfere with her general functions nor during the two preceding gestations. During the two months previous to her delivery she has lost blood in the same way, and yet has delivered in the best condition, and the calves were robust and healthy. The buyer takes the cow anyway, and with others walks her home, a distance of 50 kilometres. Arrived at her destination, the vulvar discharge is a true hæmorrhage, which soon becomes alarming. After a few days the condition has improved and the buyer wants to return the cow to the vendor, who consents on condition that the animal is brought back to him at once. The cow dies before reaching home. At the autopsy were found: generalized anæmia, the large bloodvessels containing but very small clots of blood. The fœtus was in vertebro-sacral position; the walls of the uterus had a strong purplish color; there was no blood in the uterus. The most important lesion and the probable cause of the metrorrhagia was the condition of some twenty cotyledons, which were separated and loose on the envelopes as well as on the uterus. The others were only slightly adherent and could be easily separated. —*(Clinica Veterinaria.)*

FISTULA OF STENO'S DUCT BY DISPLACEMENT OF THE OPENING OF TERMINATION THROUGH TRAUMATISM [*Prof. J. Baldoni*].—Fistulæ of Steno's duct are not rare. But this case is peculiar on account of the ending of the canal taking place

on the outer surface of the cheek. A yearling colt, while playing in the field, grabs between his teeth a piece of wood, sharp at one end, which by a sudden motion of the head is stuck in the mouth and makes a lacerated wound of the left cheek from inward outward, a wound which for six months remains rebellious to all treatment. The wound is situated in front of the masseter muscle, and runs along the long axis of the head a distance of seven centimetres. At the upper end there is a little projecting surface, covered with mucous membrane and resembling the elevation which exists on the inside of the cheek in normal condition. In the centre of this there is a small opening which allows the introduction of a fine probe; it is that of Steno's duct, from which saliva escapes more or less abundantly according to the motions of the jaw, and which has been pushed outwards and displaced by the traumatism. Through the large wound solid and liquid food escapes. Inside the mouth on a level with the third and fourth molars the opening of the duct is missing and the buccal mucous membrane is normal, except on the edges of the wound. The laceration of the cheek was enlarged by incision of its two ends, the duct isolated by careful dissection, and brought back to the buccal membrane with stitches. By superposed stitches the injured tissues were brought together and the skin, closed with firm sutures, was dusted over with iodoform. Secured to prevent rubbing, the horse was kept fasting for a few days, the wound being simply treated by washing with alcohol and dusting with iodoform. Cicatrization was perfect in eighteen days, with restoration of the parotid canal in its proper place.—*(Clinica Veterinaria.)*

Cocainization of the Sciatic and Peroneal Nerves [*Dr. Domenico Bernardini*].—A mare, 12 years old, was affected with severe lameness. The veterinarian in attendance, notwithstanding marked objective manifestations about the hock, had excluded that joint as the seat of the trouble; and, after failing in finding any lesion about the fetlock to explain the trouble, concluded that the coxo-femoral joint was the one affected. As, however, the lameness continued, a consultation was demanded. The consulting veterinarian had no hesitation and made the horse lame in the hock with osteo-arthritis. Notwithstanding this opinion, the attending veterinarian did not accept the verdict, but at the same time applied a blister on the hip, the fetlock and the hock. The animal was in great agony, and soon lost her flesh and good appearance. Her condition was such that she was brought to the clinic of the Milan Vet-

erinary School, where to convince the unbelieving veterinarian an injection of cocaine was made alongside the tracts of the sciatic and peroneal nerves, with the result that in about twenty minutes the lameness subsided. It was very interesting, says the author, to watch the appearance and countenance of the horse, which, relieved of its suffering, seemed quite happy at such rapid and unexpected relief. The animal was fired, and after a month was quite free from lameness. However, the mare never recovered her condition—*(Clinica Veterinaria.)*

PUERPURAL COLLAPSUS—RELAPSE—POST-PARTUM COMPLICATIONS [*Dr. G. Gazzaniga*].—This case is not related to show the already well known effects in the treatment of such affection by the insufflation of air, but for the complication which followed. A milk cow, in excellent condition, had delivered for a second time in a natural way, 36 hours before. When she first lost appetite, her milk secretion stopped. She was found in the morning lying down in a comatose state. Called immediately, the author resorted to the treatment of blowing air into the udder, and three hours later the cow was up, ruminating, and the next morning was apparently cured, nursing her calf. Ten days later Dr. G. heard that the cow was well, when, six days later, the symptoms returned. The animal had no appetite, no milk, and so weak that she threatened to fall. The hindquarters were like paralyzed; it required two men to hold her and prevent her from falling. Insufflation of air was again resorted to. After a few minutes the cow was eating; her temperature had gone up from 37 to 38. 5 degrees. She was considered convalescent when the author thought to see her walk. He then observed that she could go well in a straight direction, but that it was impossible for her to turn around. Brought to the stable, she laid down, and when called again to rise and move she manifested a loss of coördination in her movements. Alcoholic friction on the dorso-lumbar region, subcutaneous injection of sulphate of strychnine, were prescribed and recovery followed.—*(Clinica Veterinaria.)*

FRACTURE OF THE BASE OF THE CRANIUM [*Dr. Pietro Ghisleni*].—From the series of articles published by the author on the above subject, the following interesting case is resumed: Five-year-old mare, led out of the stable and harnessed, reared and fell heavily backwards, striking the ground on the right side of the poll. She made several attempts to get up, but failed, and in each effort struck the right side of the cranium violently. All attempts to raise her failed; she would not

stand up. When visited by the author she was lying flat on the left side, without moving, in a most marked comatose condition—eyes closed, cornea and superficy of the body insensible; hæmorrhage from both nostrils and right auditory canal; saliva bloody; respiration trembling and with râles, about 23 per minute; pulse full, intermittent and frequent, 51; temperature 37.6° C. Cutaneous excoriations on the parotid region and at base of left ear and at temporo-maxillary region. Buccal membrane pale, conjunctiva congested. Diagnosis of fracture of cranium was advanced, and fatal prognosis expressed. Owner wanted all possible efforts made to save her, and wanted treatment. After several days, however, the symptoms assumed a more severe aspect; nasal hæmorrhage continued, respiration became stertorous, pulse dropped to 30, temperature to 36° later to 35. 8–35. 3° C., and finally after 43 hours of pain the poor brute died. Nothing abnormal was found on post-mortem in any of the thoracic or abdominal organs. The lesions were about the cranial cavity, and consisted of: (1) in a fracture of the basillar process running *en bec de flute* obliquely from the left condyloid foramen to reach on the right the body of the sphenoid, at the occipito-spheno-temporal hyatus; (2) a complete semicircular fracture of the occipital bone on the left side, from the condyloid foramen to the foramen lacerum of the same side; (3) a fracture involving the right postero-lateral portion of the orbital process; (4) a comminuted fracture of the tuberous portion of the right temporal bone. Of course, with such extensive lesions, the contents of the cranial cavity, the meninges and the encephalic mass, were highly congested and surrounded more or less with clots of blood resulting from the hæmorrhage.—*(Clinica Veterinaria.)*

PHENIC ACID IN THE TREATMENT OF TETANUS.—M. Capobianco, in the *Giornale della Societa Veterinaria Italiano*, relates a case of recovery in a mule by hypodermic injections of phenic acid in aqueous solution. The patient received on the first day, in the morning, 30 centigrammes, and in the evening 1 gramme of the solution at 3 per cent. Second day he had 1.5 gramme twice a day. Third day 2 grammes morning and evening. On the fourth day improvement was manifest; trismus diminished by degrees and horse eat oats. Injections were kept up to the thirteenth day, but doses gradually reduced. This result confirms those already obtained by Prof. Brusasco. Mr. S. Scandaliato, in the same journal, has in a clinical note, recorded several cases of recovery by the same

treatment. He relates a very severe case, complicated with pneumonia, which lasted 23 days, recovery being due to the acid treatment. The animal received first 2 grammes, and the dose was slowly increased until he had 7 grammes a day. Altogether he received 90 grammes of the acid during his sickness.

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TEXT BOOK OF VETERINARY MEDICINE. By James Law, F. R. C. V. S., Director of the New York State Veterinary College. Vol. II, III, and IV. Second Edition. Revised and enlarged. Ithaca: Published by the author.

Following closely upon the issuance of the second edition of Volume I, Prof. Law has brought out another edition of the three succeeding volumes of his well-received text book, which covers the entire subject of veterinary medicine. He has not been content to simply supply the demand for more copies by running off another edition, but the latest volumes show a very careful revision of a majority of the subjects, in some instances amounting to a complete rewriting of them, while certain subjects have been added.

The REVIEW very heartily endorsed Prof. Law's work when it made its initial bow to the profession, and in its present form it is considerably enhanced in value by the injection of deliberate improvements which have suggested themselves to the author from time to time during the interval of editions. It would appear that nothing has been omitted, for by testing it as a reference book one will always be able to find in scrupulous detail almost any subject in the vast field of veterinary pathology.

Therefore, it is indispensable to the American veterinarian's library.

COST OF MAINTAINING AN AUTOMOBILE.—The New York *Herald* of Aug. 12 quotes two owners of high-priced automobiles in the matter of the cost of maintaining them. One estimates that for each mile his machine travels it costs 90 cents. Accurate accounts kept for one year showed that it required $400 per month to indulge in the luxury. The second automobilist gave $4000 in round numbers as the amount he had expended upon his $5000 bubble during the past year. When it is asserted that they cost no more than horses, the hero of the assertion has probably never had to foot the bills.

OBITUARY.

EVAN D. ROBERTS, M. D. C.

We regret very much to announce the altogether unexpected death of this prominent veterinarian, which occurred at the Lake Side Hospital, Chicago, Aug. 4, following what was considered a trivial operation for an old but small ventral hernia, which could just as well have been left alone, as it was harmless. Soon after coming from under the influence of the anæsthetic he felt that everything was not right at the seat of operation, and wrote instructions for his burial in case he did not survive. The day following the operation he vomited fæcal matter, when the wound was reopened, but it was said that everything was right, save for a little peritonitis, but he grew rapidly worse, and was dead in another twenty-four hours.

Dr. Roberts was born in Caledonia, Racine County, Wis., Jan. 17, 1862, graduating from the Chicago Veterinary College in 1888, and for a time was assistant to Dr. Joseph Hughes. He then located at Janesville, Wis., where he conducted a successful practice until 1900, when he was appointed State Veterinarian by Gov. La Follette, being reappointed in 1904, which office he held at the time of his death. He was a member of the Wisconsin Society of Veterinary Graduates, which passed resolutions of respect to his memory at its meeting in La Crosse Aug. 8 and 9. He was instrumental in the establishment of the Wisconsin Live Stock Sanitary Board, of which he was also a member.

EXPERIENCE WITH VON BEHRING'S METHOD OF PROTECTIVE VACCINATION OF CATTLE AGAINST TUBERCULOSIS.—Schricker (*Wochenschr. Tierheilk. u. Viehzucht*, 50 (1906), No. 7, pp. 121–128).—Von Behring's method of vaccination against tuberculosis has been in practical use for 3 years and the results obtained, therefore, give a good foundation for judging its effectiveness. The author vaccinated 76 animals by this method without any bad effects, and no evidences of live tubercle baccili were found in any of the animals which were subsequently killed and examined. It is concluded, therefore, that a protective vaccination of calves under four months of age is capable of greatly increasing the resisting power toward tuberculosis and in some cases checks slightly the development of an infection already existing at the time of vaccination.

STRICTLY GERM PROOF.

By J. F. DeVine, D. V. S., Goshen, N. Y.

The antiseptic baby and the prophylactic pup
Were playing in a garden when the bunny gamboled up.
They looked upon the creature with a loathing undisguised—
It wasn't disinfected, and it wasn't sterilized.

They said it was a microbe and a hot-bed of disease;
They steamed it in a vapor of a thousand odd degrees;
They froze it in a freezer that was cold as banished hope
And washed it in permanganate with carbolated soap.

In sulphuretted hydrogen they steeped its wiggly ears;
They trimmed its frisky whiskers with a pair of hard-boiled shears;
They donned their rubber mittens, and took it by the hand
And 'lected it a member of the fumigated band.

There's not a micrococcus in the garden where they play;
They swim in pure iodoform a dozen times a day,
And each imbibes his rations from a hygienic cup—
The bunny and the baby and the prophylactic pup.

THE COUNTRY VET.

By J. W. Robinson, V. S., Coleharbor, N. D.

The day is cold, and dark, and dreary,
It rains, and the wind is never weary;
A farmer calls for you to come,
You hesitate, you're blue, and glum.
"But hurry up! Old Bossie's sick!
She's all swelled up, you must be quick!"

Now for the ride you must prepare,
You open your grip, and look, and stare.
A trocar you see, but the probang's not there,
You look at the walls and prepare to swear:
"Such troubles I have no one can tell,
This veterinary business is surely h—l."

You hitch up your horse with a feeling of pain,
And start on your ride through the drifting rain.
The road is all mud, and the wheels get thick,
You would surely turn back, but old Bossie's so sick.
So you keep going on till you reach the barn,
And the old man is there to tell you his yarn.

Old "Bossie" is down and can't get up,
All bloated and stiff like a "drowned pup."

Her legs stick out straight, and her eyes look blue,
You say to yourself: "It's up to you,"
But you've lost your nerve and cannot lie
So tell the old man that his cow will die.

The farmer looks down and thinks in the quiet,
"If she'd a only made water she'd a been alright."
"Well, what de ye want fer yer trip out here,
Ye know most any price ud be purdy dear?"
"Jest charge it ta me 'till I sell my grain,
Something else el be sick and I'll call ye again."

You start back homeward, disgusted, tis true,
And feel as though luck had turned upon you.
As you plod along homeward you sit and think:
"It's no wonder so many good fellows drink."
I have heard tell of hardships, but there's nothing yet,
Can equal the life of a country vet.

CORRESPONDENCE.

DR. ROBERTS' ARTICLE ON ABORTION IN COWS.

WATERFORD, WIS., Aug. 20, 1906.

Editors American Veterinary Review:

DEAR SIRS:—Criticism, properly exercised, is the corrigent and adjuvant of all literature, and in its present rapid rise to prominence veterinary literature will most need its modifying influence. In the August number of the REVIEW, we note an article by Dr. Roberts on "Abortion in Cows." The article was read carefully, as a "cattle specialist" might be expected to shed some much needed light on this rather dark subject. Dr. Roberts says: "Abortion is due to a germ, and therefore infectious, and it can be easily proven by any one who wishes to make the experiment." Here is an excellent suggestion for experiment stations—hardly practicable for conscientious practitioners.

He states that "a cow having become infected will abort the usual number of times and then become immune." Would it not have been well to have had some well authenticated data attached to that assertion? He further intimates that "a cow, if isolated and given prompt treatment as soon as the symptoms of abortion . . . manifest themselves," may soon be returned to the herd in a healthy condition. Friedberger and Fröhner state that, once started, it is impossible to prevent an abortion. The entire article rings with optimistic assertions regarding

the curability of the disease. We suggest that the profession be allowed to note down the formula of Dr. Roberts' anti-abortion serum so extensively advertised on the fences and barns of Wisconsin.

As to the *bona fide* reliable information contained in the Doctor's essay, it can be gleaned from clearer compositions by our standard authors. However, it must not be inferred that the article is entirely useless. It gives Dr. Roberts a standing with the profession in spite of the obnoxious "Vet. Rem. Co." branch of his practice.

J. W. MOYLE, D. V. S.

REGISTRATION IN MASSACHUSETTS.

GLOUCESTER, Aug. 12, 1906.

Editors American Veterinary Review:

DEAR SIRS:—I wish to notify you that on July 21st, 1906, the following amendments to the law which established a Board of Registration in Veterinary Medicine in Massachusetts, went into effect. They are in synopsis, that the Board shall have the power to investigate all complaints, that recompense would be given to the executive officer of the Board to investigate these complaints; that the application fee for examination be increased from $5 to $15, and that the Board be given the explicit power to revoke and annul certificates under certain conditions.

I send you this as an item of interest to the readers of the REVIEW. Yours truly, E. W. BABSON, *Secretary.*

"THE REVIEW is constantly enlarging, and I will never be without it while I can raise the subscription price."—*(E. M. Bronson, Secretary Indiana V. M. A., Indianapolis, Ind.)*

ON his way to the Transvaal, Dr. Aquila Mitchell, graduate of the A. V. C., class 1895, called on Dr. Liautard and passed with him a pleasant hour talking over old 54th Street times.

DR. MARK WHITE, Denver, Col., is editor of the dog department of a monthly journal called *Dogs and Cats*, published at Denver. He has an article in the July number on "Hydrophobia or Rabies."

THE INDIANA VETERINARY COLLEGE, Indianapolis, Indiana, under date of July 21, requested us to send a copy of the latest REVIEW to be placed in the corner stone of its new building. It was forwarded, and we herewith offer our congratulations.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

The 43d annual meeting was called to order by the President, Dr. William Herbert Lowe, at 10.30 A. M., in the large assembly room of Harmony Hall, New Haven, Conn., Tuesday, Aug. 21, 1906, at which hour there was a very large number of members, ladies and visiting veterinarians present.

At the fall of the gavel the President announced that the session was formally open for the transaction of business, and then introduced Mayor John B. Studley, of New Haven, who welcomed the veterinarians to the Elm City. The Mayor delivered an address occupying about twenty minutes, which consisted of a brief but comprehensive history of the city and of its great educational institution, together with its enviable position in the industrial world. While these points were detailed with evident pride and in an entertaining manner, the Mayor's remarks were delightfully interspersed with anecdotes and with many evidences of being in possession of much "horse sense." In fact, he pleaded with the veterinarians engaged in research work to look diligently for the microbe of what he termed horse sense, and if found they should endeavor to have it inoculated into the human animal, for his permanent improvement. The Mayor was most attentively listened to and was roundly applauded when he declared that New Haven's pride, Yale University, would never be a complete educational institution until a department of comparative medicine was added to its curriculum.

At the completion of the Mayor's address, the President called upon Dr. J. G. Rutherford, Veterinary Director-General and Live Stock Commissioner of the Dominion of Canada, Vice-President of the A. V. M. A., to respond to His Honor's welcome to the Association, and it is needless for the REVIEW to tell those who know the gifted son of Scotland that he covered himself with glory and made the walls echo with applause when he had completed his wise and witty acknowledgment of the Association's sense of appreciation of the honor conferred upon it. Altogether the opening of the meeting was a most pleasant and profitable event, and made a splendid curtain-raiser for the greatest convention of veterinarians from all over this continent and the dependencies that was ever held on this soil, and, in our humble judgment, is second only to the great international

congresses of veterinary medicine which have occurred in Budapest and in Baden Baden.

Having cleared the field for action, the President began the reading of his annual address, which was as follows:

PRESIDENT LOWE'S ADDRESS.

"*Fellow-Members of the American Veterinary Medical Association:*

"I think that, without exception, there never has been a time in America that has been fraught with interest of such vast proportions and far-reaching results to the veterinary profession than during my incumbency in the presidency of the American Veterinary Medical Association. The profession has sustained losses, as is always the case in great struggles, but the gain and advancement has been phenomenal and will without doubt place the veterinary profession, in the United States at least, in the very front rank in the matter of veterinary sanitation and the inspection of animal food products.

"The gross exaggeration of facts and conditions, misrepresentation and sensationalism that we have passed through during the last few months in this country is simply abominable and has shocked the whole civilized world. As a consequence the financial loss to this country in exports of animal food products has been enormous and almost beyond human comprehension.

"This is the cost of the recent agitation of packing house conditions and practices, but if the new meat inspection law and the new pure food law accomplish what they purport to do it will not be long until the quality, soundness, healthfulness, and wholesomeness of our food products will be above suspicion and public confidence restored at home and abroad.

"The retirement of Doctor Daniel Elmer Salmon, former President of this Association, from the important position of Chief of the United States Bureau of Animal Industry at Washington is a great loss to agricultural and live-stock interests from an international as well as from a national point of view. Dr. Salmon contributed much to science besides the control and extermination of animal plagues. The fact that he established and organized a bureau that under his guidance and directorship had grown, in the short period of twenty-one years, to be the largest and the most important of its kind in the world, a monument to his name, and a credit to his profession, which will be imperishable while the government at Washington stands and veterinary science and art are extant.

"As the executive of the American Veterinary Medical Association I recommend that this Association take suitable action expressive of the great work at Washington of former President Daniel Elmer Salmon in behalf of his government, veterinary science and mankind, and that an engrossed copy of such testimonial of his work and worth be prepared and presented to Dr. Salmon by a committee of this Association.

"While we regret the retirement of Dr. Salmon, we are delighted that another honored member of this Association has been found worthy and capable to be promoted to fill the position of Chief of the United States Bureau of Animal Industry.

"At the time of the retirement of Dr. Salmon it was thought by the administration at Washington that it might be best to select a man not connected with the administration of bureau affairs, and Dr. A. D. Melvin, assistant chief, was temporarily placed in charge pending the decision of the Secretary of Agriculture.

"Secretary Wilson expressed a desire to have an expression from this Association as to the qualifications of the man to be appointed. Your President thought it wise to exercise his prerogative and called a special meeting of the Executive Committee in Philadelphia, Pa., Oct. 25th, last. At this meeting the names of five members of the Association (Dalrymple, Melvin, William Herbert Lowe, Lyman and Pearson) were nominated by the committee. It was ordered that these five names were to be submitted to the members of the Association resident in the United States for their choice, but that members were not to be restricted to these five names in voting, and that the names of the three members receiving the largest number of votes were to be submitted to Secretary Wilson, from whom he might make his selection. There was an unexplained delay on the part of the sub-committee having this matter in charge. Dr. Melvin in the meantime displayed admirable executive ability, and exercised good judgment in the administration of bureau affairs to the satisfaction of Secretary Wilson and everybody concerned whereupon the Secretary promoted him to be the Chief of the Bureau of Animal Industry.

"Dr. Melvin by reason of his long experience in bureau affairs, his extensive knowledge of the live stock business and meat inspection, his personal acquaintanceship with those in the trade and those in the Bureau from the lowest to the highest, the high esteem in which he was held by everybody connected with the service were some of the reasons why he was

entitled to promotion and why Secretary Wilson made the appointment.

"I appeal to every loyal member of this Association, with all the earnestness within me, to support our new chief in every way possible. He has had a strenuous time and arduous and great duties to perform since his appointment. The success of his administration will depend in no small degree upon the support the veterinary profession gives him. I would approve of some action being taken by this Association congratulating him on the work he has already accomplished and pledging him our support as the representative organization of America.

"Dr. Melvin's elevation to the head of the service made possible the advancement of other worthy and capable men long in the service of the bureau, my predecessor as United States veterinary officer of the Port of New York and superintendent of the animal quarantine station for said port, Dr. A. M. Farrington, being promoted to the second highest office in the bureau, that of assistant chief.

"While meat and pure food legislation has been enacted by the United States Congress and while some excellent laws for the regulation of veterinary practice and of veterinary sanitary control work have been placed upon the statute books of a number of states since our last annual meeting, yet I regret that the Committee on Army Legislation has been unable to obtain the legislation asked for the promotion of the efficiency of the veterinary service in the United States Army. This class of work cannot be done at long range. When the time comes to push the Army Bill again, this Association should have a committee constantly at Washington to take care of the measure and to see that it gets a chance to see daylight. A committee running down to Washington at night and rushing back the following night cannot properly and effectively take care of a pending measure. The work of this committee should not be limited to army legislation, therefore I recommend that the by-laws be amended so as to increase its scope to include all legislation favorable or inimicable to veterinary interests and advancement, whether at Washington, Ottawa or other capital city.

"I have official advice that our esteemed fellow-member, Dr. Charles H. Jewell, Thirteenth Cavalry, United States Army, stationed at Fort Riley, Kansas, has been sent by the War Department as a representative of the army veterinarians to this meeting. At the proper time we shall be pleased to listen to what he has to say to us on 'The Veterinary Service

of the United States Army and the Military Veterinarian.'

"It is probable that at this meeting we will learn something at least of the best thought and work of the old world as well as of the new, for this Association was represented at the Eighth International Veterinary Medical Congress at Budapest, and at the Tuberculosis Congress at Paris, by a number of her brightest minds. The A. V. M. A. was also represented at the unveiling of the Nocard monument at Alfort by two of her oldest and most esteemed members.

"There is no work that this Association has taken part in that is more important than that of veterinary education. Much has been accomplished during the last few years in raising the standard of veterinary education on this continent, but there is much room for improvement in some of the schools at least.

"Uniform matriculation requirements, uniform curricula, uniform degree upon graduation, uniform state requirements for license to practice and interchangeable state licenses, where the requirements will permit of it, are some of the problems to be met by the Association of Veterinary Faculties and Examining Boards. The reorganization of this body last year at Cleveland was a great step in the right direction and I believe that as now constituted, with three members from the colleges, three from the examining boards and three from this Association, it ought to have a harmonizing and strengthening influence.

"There ought, in my opinion, to be some state control over matriculation in every state as well as over graduation and licensing of veterinarians to practice, because students are constantly being matriculated in our colleges who do not possess the proper fundamental education nor are adapted for the veterinary profession, or who have not the brains to make successful veterinarians. No profession can advance as it should unless the best kind of men are attracted to it. The time to stop a candidate is at the time of matriculation and not at graduation or when he seeks a license to practice his profession. If the state makes the requirements for matriculation of the veterinary student, as it has done for license to practice this and other professions, the problem is solved.

"The future of the veterinary profession does not depend upon 'the coming of the automobile' or 'the passing of the horse,' but it does depend, and always will depend, upon the ability, adaptability, character and purpose of the young man who knocks at the college door for matriculation. Our code of ethics is a very nice thing, and I believe in a code of ethics as

much as any one, yet it amounts to nothing, and is no deeper than veneer, unless behind ethical conduct there is character, principle and a high purpose.

"The suggestion to establish a veterinary college at the Union Stock Yards, Chicago, where men may be thoroughly qualified to inspect meats on the hoof and in the carcass, a school where all diseases, common and uncommon, among domesticated animals may be exhibited in the clinics and where students may obtain an education in animal husbandry ought to awaken educators to the pressing demand of the hour. The *Breeder's Gazette* declares that 'a world's trade is at stake' and that we must have 'a school commensurate with the needs of the whole round globe.' All I have to say is that if any of the veterinary schools of this country are not educating and training men along lines that will fit them for this very kind of work it is a sad commentary upon their work and it is high time that their faculties revise their curricula and methods of teaching and training to conform to the demand of the times.

"There should be some supervision over the colleges to see that they carry out what they announce in their catalogues and to see that the faculties and trustees of the colleges require and insist upon actual attendance of students during the full period for which they are accredited in conformity with the laws of many of our states.

"One of the factors that has materially retarded the work of veterinary educators in this country has been the lack of funds to erect, equip and maintain veterinary colleges adequate to the requirements of the times. Through the sagacity of Dr. Leonard Pearson, the University of Pennsylvania gets $250,000 towards veterinary education.

"I can leave the subject of veterinary education with safety, since it is to receive its full share of attention at this meeting. Dr. Leonard Pearson, Dean of the Veterinary Department of the University of Pennsylvania, will give us an account of 'The Veterinary Schools of Europe,' and Dr. D. S. White, Dean of the Veterinary Department of the Ohio State University, will present a paper on 'Veterinary Education in the United states.'

"There never was as great an opportunity for the veterinarian as there is to-day. There are not enough qualified men to fill the more important professional positions and the deplorable thing about this is these places are being filled by medical men and others who have not had adequate training in compar-

ative medicine and who know nothing about animal husbandry. I do not believe that such a situation exists in any other profession in America to-day. It will be many years before the supply equals the demand. It may become crowded for those who are at the bottom of the ladder, especially for those who in large cities and in residential sections confine themselves to equine practice, but where the automobile displaces carriage horses there will be other avenues opened for the qualified veterinary practitioner.

"There is no community that does not need the services of the qualified veterinarian in municipal, board of health, meat and milk inspection and sanitary work.

"There are places in hundreds of towns and cities for qualified veterinarians as meat and milk inspectors. There should be at least one qualified veterinarian connected with the board of agriculture and with the board of health of every state. Veterinary work should be under veterinary direction in state as well as national government. Qualified veterinarians are needed in agricultural colleges and experimental stations and I venture to predict that it will not be many years before all recognized schools of human medicine will include a chair of veterinary science in their curriculum. There should be a veterinary hospital and laboratory connected with every school of human medicine.

"A small army of qualified veterinarians are urgently needed at the present hour in the meat inspection service of the United States Bureau of Animal Industry.

"I believe that one of the greatest factors for the advancement of the veterinary profession is well edited journalism. When the United States Veterinary Medical Association founded the AMERICAN VETERINARY REVIEW it did better than it knew, for this journal under its present able management has grown in volume, power and favor until it is indispensable in a veterinarian's library or office if he wants to keep in touch with the advance work of the profession at home and abroad. The REVIEW is as essential to the veterinarian, if he wishes to keep abreast of the times, as the trolley is to the locomotion of the trolley car.

"There is an article in our by-laws that does not altogether suit me. I refer to the article establishing an honor roll. I would have had the condition of enrollment on the honor roll *achievement* rather than the length of membership in the Association. One member might do more for the advancement of

science and the profession in one year than another would or could do in his natural life time. It is the men who do things that should be honored. It may be a man who through his investigations and experimentations contributes in the way of a discovery something of great benefit to science and mankind; it may be a man who obtains an important piece of legislation for the profession; it may be a man who in the administration of official office elevates the standard or extends the scope of the profession; it may be a man who contributes to veterinary literature or it may be a man who contributes in some other way more than his fellows to the advancement of our science and art.

"I therefore recommend that this article be amended so as to make the condition of enrollment achievement instead of length of membership, or that an amendment be adopted creating a degree of F. A. V. M. A. (Fellow of the A. V. M. A.). This degree to be conferred only upon those who have rendered some conspicuous service for the benefit and advancement of veterinary science and art, and who have been recommended for such conspicuous service by a majority of the living past presidents of the A. V. M. A.

"Soon after my election I made a special effort to increase the membership of the A. V. M. A. Through the office of the Secretary in Philadelphia, the Resident State Secretary in every state and province on the continent was asked to use his best efforts and influence to obtain all the worthy material possible so that the work of the Association might go forward with a might that would be irresistible. It is a disappointment to me that only fifty-five applications have been filed in the Secretary's office up to the date of this meeting.

"My opinion has changed somewhat in regard to the way members should be elected to the American Veterinary Medical Association. I have come to believe that it might be best to have the constituency of membership of this international organization representative in character. Let each state and provincial veterinary association send representatives to the annual sessions of the A. V. M. A. according to the membership of the local organizations. It would be considered a great honor to be sent by the profession of one's state or province to represent the profession in the councils of the A. V. M. A.

"Leaders would naturally be chosen, and those who displayed ability, worked for the profession and obtained the best results would be continued in membership and those who did

not give satisfaction to the profession at home would soon be retired and others chosen to take their places. I would recommend that a committee be appointed to look into this proposition as to membership; to ascertain how the members of international and national organizations of other professions ar chosen; to study the subject from every standpoint and make their report and recommendations at our next annual meeting.

"The American Veterinary Medical Association is proud that again a veterinarian through distinguished professional attainments has been rewarded with the honor of knighthood. I refer to Prof. John McFadyean, Principal of the Royal Veterinary College, London, who was knighted by King Edward VII on the occasion of the birthday of the latter on Nov. 9 last. Honor conferred on an individual member of a profession necessarily reflects credit on the profession of which the recipient of such an honor is a member. In bestowing this honor upon one of the members of the veterinary profession, King Edward has not only honored the entire profession, but has publicly given acknowledgment of the importance of veterinary science to mankind. In behalf of the A. V. M. A. I congratulate Sir John, wishing him a long life of happiness and usefulness in behalf of veterinary science.

"It is passing strange that although the health and wealth of the people depends in an essential and fundamental way upon an intelligent application of veterinary science and art, that the scope, nature, character and importance of animal experimentation, investigation, study, research and work of the veterinarian in general has upon sanitary science and preventive medicine that the American people have been so slow in affording the veterinary profession an opportunity at least equal to the other learned professions for growth and development.

"To cure disease is what is constantly asked of the physician. This is mere repair work. It is like patching up a leaky boiler. It is necessary, no one doubts that; but from a more advanced point of view, its place is restricted. It should no longer be the all important thing. A fundamental and much larger work is that of prevention of disease, which is of paramount importance if the vitality of the human race is to be maintained and strengthened. Many of the diseases of man would not occur at all if there was a proper application of veterinary science and art.

"It would be considered presumption among enlightened

people to define the profession of law, human medicine or theology, yet how many of this class of people in America to-day have a comprehensive and proper conception of the essential, fundamental and vital importance of veterinary science that protects human health and life from invasions of disease as well as fosters and safeguards our vast agricultural wealth, which means so much from an economic and financial standpoint to the people of this American continent and of the entire world."

At the conclusion of the President's address Dr. Lowe was warmly praised for the great study which he had evidently given to the needs of the profession, as his remarks were pregnant with suggestions looking to the uplifting and safeguarding of its interests. The document was referred to the incoming Executive Committee, with instructions to take up the various recommendations which it contains, and to report upon them *seriatim* at the convention of 1907.

As has been the custom for many years, reading of the minutes was dispensed with, and was substituted by the presentation by the Secretary of the printed volume issued by the Association to its members.

The calling of the roll was likewise dispensed with, the attendance being ascertained by the card system of registration, from which the REVIEW has compiled the following list:

THOSE IN ATTENDANCE.

Members.

Canada.—M. C. Baker, Montreal; A. W. Harris, Chas. H. Higgins, J. G. Rutherford, Ottawa; Thomas Thacker, Renfrew.

Colorado.—Chas. G. Lamb, Denver.

Connecticut.—C. L. Adams, Danielson; Thomas Bland, Waterbury; F. F. Bushnell, Middletown; Chas. L. Colton, Hartford; A. C. Knapp, Bridgeport; G. W. Loveland, Torrington; Richard P. Lyman, Hartford; R. D. Martin and F. W. McLellan, Bridgeport; E. H. Morris, Derby; Edward C. Ross, New Haven; H. L. Torrer, Norwich; George V. Towne, Thompson; C. R. Witte, New Britain.

Cuba.—Nelson S. Mayo, Santiago de las Vegas.

District of Columbia.—John R. Mohler and E. V. Wilcox, Washington.

Florida.—J. G. Hill, Jacksonville.

Hawaii.—W. T. Monsarrat, Honolulu.

Illinois.—A. W. Baker, Joseph Hughes, L. A. Merillat,

James Robertson, John F. Ryan, C. A. White, Chicago; A. M. Wray, Richmond.

Indiana.—J. W. Klotz, Noblesville; J. R. Mitchell, Evansville; G. H. Roberts, Indianapolis.

Iowa.—J. H. McNeil, Ames; C. E. Stewart, Chariton.

Kansas.—Chas. H. Jewell, Fort Riley.

Kentucky.—D. A. Piatt, Lexington.

Louisiana.—W. H. Dalrymple, Baton Rouge; M. M. White, Shreveport.

Maine.—George F. Wescott, Portland.

Maryland.—Wm. Dougherty, F. H. Mackie, G. A. Jarman, Baltimore.

Massachusetts.—Francis Abele, Quincy; H. D. Clark, Fitchburg; W. H. Dodge, Leominster; Daniel Emerson, Boston; H. B. Hamilton, New Bedford; L. H. Howard, Boston; Harry Lukes, Springfield; James B. Paige, Amherst; C. H. Perry, Worcester; Austin Peters, Boston; J. G. Pfusick, Greenfield; C. W. Playdon, Reading; Benj. D. Pierce, Springfield; J. H. Roberts, Northampton; C. R. Simpson, Boston; Wm. T. White, Newtonville; J. F. Winchester, Lawrence; Charles Winslow, Rockland.

Minnesota.—Charles E. Cotton, C. C. Lyford, Minneapolis; M. H. Reynolds, St. Anthony Park; S. H. Ward, St. Paul.

Mississippi.—E. M. Ranck, Natchez.

Missouri.—B. F. Kaupp, R. C. Moore, S. Stewart, Kansas City.

Nebraska.—Richard Ebbitt, Grand Island; H. Jenson, Weeping Water; Charles A. McKim, A. T. Peters, Lincoln.

New Brunswick.—D. McCuiag, Moncton.

New Hampshire.—Lemuel Pope, Jr., Portsmouth.

New Jersey.—T. Earle Budd, Orange; J. Wm. Fink, Arlington; J. T. Glennon, Newark; S. G. Hendren, Arlington; John B. Hopper, Ridgewood; John V. Laddey, Morristown; E. L. Loblein, New Brunswick; J. Payne Lowe, Passaic; Wm. Herbert Lowe, Paterson; Thomas E. Smith, Jersey City; L. E. Tuttle, Bernardsville, Geo. B. Vleit, Hackettstown.

New York.—E. B Ackerman, Roscoe R. Bell, George H. Berns, Brooklyn; W. Reid Blair, C. E. Clayton, N. Y. City; J. F. DeVine, Goshen; Robert W. Ellis, N. Y. City; P. A. Fish, Ithaca; Otto Faust, Poughkeepsie; H. D. Gill, F. C. Grenside, N. Y. City; Elisha Hanshew, Brooklyn; H. D. Hanson, Thomas J. Herr, N. Y. City; W. G. Hollingworth, Utica; Wilson Huff, Rome; Wm. Henry Kelly, Albany; G. A.

Knapp, Millbrook; James Law, Ithaca; R. W. McCully, J. L. Robertson, Thomas G. Sherwood, N. Y. City; Clarence E. Shaw, Brooklyn; M. C. Thompson, Bangall; W. J. Taylor, Ithaca; A. J. Tuxill, Auburn; H. N. Waller, N. Y. City; L. R. Webber, Rochester; W. L. Williams, Ithaca.

North Carolina.—Tait Butler, Raleigh.

Ohio.—Eugene Burget, Wadsworth; A. S. Cooley, Cleveland; T. B. Hillock, Columbus; John V. Newton, Toledo; E. H. Shepard, Cleveland.

Pennsylvania.—F. J. Allen, H. P. Brooks, S. J. J. Harger, Philadelphia; Jacob Helmer, Scranton; W. Horace Hoskins, C. J. Marshall, Philadelphia; Otto Noack, Reading; E. C. Porter, New Castle; E. W. Powell, Bryn Mawr; John J. Repp, Philadelphia; W. H. Ridge, Trevose; F. H. Schneider, Philadelphia; S. E. Weber, Lancaster; W. E. Wight, Pittsburgh.

Rhode Island.—T. E. Robinson, Westerly.

South Carolina.—Louis Friedheim, Rock Hill.

Tennessee.—George R. White, Nashville.

Vermont.—Robert Weir, Rutland—(144).

Visiting Veterinarians.

Alabama.—T. H. Saul, Montgomery.

Connecticut.—Frank G. Atwood, New Haven; H. C. Balzer, Meriden; Harry E. Bates, South Norwalk; E. M. Beckley, Meriden; G. E. Corwin, Jr., Canaan; Geo. F. Crowley, B. K. Dow, Willimantic; G. F. Elliott, Bristol; H. H. Ferr, Litchfield; Wm. Foster, Waterbury; Geo. H. Hoey, New Haven; Lewis B. Judson, Winsted; V. M. Knapp, Danbury; James F. Laden, New Haven; Albert Long, New Haven; F. D. Monell, Derby; Geo. F. McGuire, New Britain; W. S. Plaskett, Clinton; J. S. Schofield, E. F. Schofield, Greenwich; W. M. Simpson, Meriden; W. J. Southey, Bridgeport; R. S. Todd, New Milford; L. J. Turner, Winsted; J. E. Underhill, New London; W. F. Vail, Greenwich.

District of Columbia.—J. D. Robinson, Washington.

Illinois.—F. H. Davis, Chicago.

Massachusetts.—Frank J. Babbitt, Lynn; W. P. Barnes, Dewiesport; Frederick Chaffee, Pittsfield; F. D. London, Great Barrington; R. J. Marshall, Williamstown; W. J. Meloche, Spencer; A. A. McDonell, North Adams; L. H. Paquin, Webster; Harrie W. Peirce, Medford; W. T. Pugh, Southbridge; J. W. Robinson, Natick; G. W. Stanbridge, Winchendon; Jesse A. Viles, Lowell; Samuel F. Wadsworth, Boston.

Michigan.—W. N. Armstrong, Concord.

Missouri.—W. C. McPherson, Kansas City; C. N. Scott, Mound City.

Nebraska. — Peter Simonson, Fremont; E. F. Stewart, Beatrice; W. E. von Nordheim, Wahoo.

New Hampshire.—C. E. Berchsted, Concord; F. L. Bodwell, Dover; G. E. Chesley, Rochester; A. L. Dodge, Manchester.

New Jersey.— S. Lockwood, Woodbridge; Jas. McDonough, Montclair; Werner Runge, Newark; S. C. Tremaine, Bridgeton.

New York.—F. W. Andrews, Mt. Kisco; A. W. Baker, Oneonto; J. L. Delaney, Millerton; J. R. Hammond, Port Jefferson; A. H. Ide, Lowville; T. F. Krey, N. Y. City; Geo. W. Meyer, N. Y. City; R. A. McAuslin, L. McLean, W. J. McKinney, Brooklyn; Richard R. Morrison, White Plains; J. H. Phelan, N. Y. City.

Ohio.—Louis P. Cook, Cincinnati; P. A. Dillihunt, Springfield.

Pennsylvania.—Harry E. Bender, Lititz; Frank U. Fernsler, Lebanon; R. L. Kann, Mechanicsburg; J. F. Olweiler, Elizabethtown; W. B. Protheri, Johnstown; Chas. A. Spicer, Caraopolis; A. W. Wier, Greenville.

Rhode Island.—L. T. Dunn, John A. McLaughlin, Providence.

Vermont.—H. H. Burgess, Bennington; F. C. Wilkinson, Bellows Falls.

Virginia.—R. R. Clark, Newport News.

West Virginia.—J. C. Callender, Parkersburg—(84).

Ladies.

Canada.—Mrs. C. H. Higgins, Ottawa; Miss A. Rutherford, Ottawa; Mrs. Thacker, Miss Thacker Renfrew.

Connecticut.—Mrs. Albert Long, New Haven; Mrs. Richard P. Lyman, Hartford; Mrs. Studley, New Haven; Mrs. F.F. Bushnell, Middletown; Mrs. G. W. Loveland, Torrington; Miss May Loveland, Torrington; Miss Caroline E. Hiller, New Haven; Mrs. C. L. Adams, Danielson; Miss Charlotte A. Hubbard, New Haven; Miss Rose Dimock, Mansfield Depot.

District of Columbia.—Mrs. J. D. Robinson, Washington.

Florida.—Mrs. H. M. Hill, Jacksonville.

Hawaii.—Mr. W. T. Monsarrat, Honolulu.

Illinois.—Mrs. C. A. White, Chicago; Mrs. A. H. Baker, Chicago; Mrs. Joseph Hughes, Chicago; Miss Helen R. Hughes, Chicago.

Indiana.—Mrs. J. R. Mitchell, Evansville.

Kentucky.—Mrs. S. J. Steele, Winchester.

Maryland.—Mrs. F. H. Machie, Baltimore; Mrs. G. A. Jarman, Baltimore.

Massachusetts.—Miss M. J. Cooney, Springfield; Miss Ruth Lukes, Springfield; Mrs. Lukes, Springfield; Mrs. Chas. H. Perry, Worcester; Miss Mary B. Emerson, Lynn; Mrs. B. F. Pierce, Springfield; Mrs. Francis Abele, Quincy; Mrs. W. T. Pugh, Southbridge; Mrs. Simpson, Springfield; Mrs. Charles R. Simpson, Boston.

Michigan.—Mrs. Harry E. States, Detroit; Mrs. S. Brenton, Detroit; Miss R. L. Brenton, Detroit.

Minnesota.—Miss S. E. Lyford, Minneapolis.

Missouri.—Mrs. B. F. Kaupp, Kansas City; Miss Belle Stewart, Kansas City.

Mississippi.—Mrs. E. M. Ranck, Natchez.

Nebraska.—Mrs. H. Jensen, Weeping Water; Mrs. A. T. Peters, Lincoln; Mrs. C. A. McKim, Lincoln.

New Hampshire.—Mrs. C. E. Burchsted, Concord.

New Jersey.—Mrs. Wm. Herbert Lowe, Paterson; Miss Dorcas A. Loblein, New Brunswick; Mrs. S. C. Tremaine, Bridgeton; Mrs. T. Earle Budd, Orange; Mrs. Geo. B. Vleit, Hackettstown; Mrs. John B. Hopper, Ridgewood, Mrs. W. Runge, Newark.

New York.—Mrs. D. L. McGrath, Rome; Mrs. A. J. Tuxill, Auburn; Miss Frances Dawley, West New Brighton; Miss Nellie C. Berns, Brooklyn; Mrs. Geo. H. Berns, Brooklyn; Mrs. G. A. Knapp, Millbrook; Mrs. W. H. Kelly, Albany; Mrs. E. B. Ackerman, Brooklyn; Mrs. Robert W. Ellis, N. Y. City; Mrs. L. R. Webber, Rochester; Mrs. H. D. Hanson, N. Y. City; Mrs. W. L. Williams, Ithaca.

Ohio.—Mrs. P. A. Dillihunt, Springfield; Miss Flora A. Cooley, Cleveland; Mrs. T. B. Hillock, Columbus; Mrs. A. S. Cooley, Cleveland; Mrs. John V. Newton, Toledo; Mrs. R. C. Hill, West Alexandria.

Pennsylvania.—Mrs. F. S. Allen, Philadelphia; Mrs. W. H. Ridge, Trevose; Miss Mabetts B. Allen, Philadelphia; Mrs. C. J. Marshall, Philadelphia; Mrs. H. P. Brooks, Philadelphia; Miss Margaret Hoskins, Philadelphia; Mrs. Annie C. Wier, Greenville; Miss. Emma L. Brooks, Philadelphia; Mrs. E. W. Powell, Bryn Mawr; Mrs. Geo. F. Kamerer, Greenville; Mrs. W. H. Hoskins, Philadelphia; Mrs. F. H. Schneider, Philadelphia; Mrs. W. E. Wight, Pittsburgh.

South Carolina.—Miss Carrie Friedheim, Rock Hill.

Vermont.—Miss Flora C. Burgess, Bennington ; Mrs. H. W. Burgess, Bennington.

West Virginia.—Mrs. J. C. Callender, Parkersburg—(88).

Other Visitors.

Canada.—A. Loir, M. D., Ottawa.

Connecticut.—Wm. H. Brewer, New Haven ; A. B. Clark, Beacon Falls ; John H. Gibbons, New Haven ; Arthur Andrews, Waterbury ; J. E. Watson, Marbledale ; Arthur Bissill, Litchfield ; J. Berliniche, New Haven ; D. W. Smith, Ansonia ; T. E. Donovan, Skelton ; Charles F. Roberts, New Haven ; George E. Tucker, New Haven ; F. S. Baches, Wallingford ; E. S. Peterson, New Haven ; G. Elliott, New Haven ; J. B. Studley, New Haven ; A. G. Capewell, New Haven ; W. S. Neale, New Haven ; Master C. L. Adams, Danielson ; A. W. Ranney, Hartford ; Cliff Bradley, New Haven ; H. O. Averill, Washington ; M. L. Carpenter, East Hampton ; Walter Holcomb, Torrington.

Hawaii.—Master Marcus R. Monsarrat, Honolulu.

Illinois.—V. E. Kovar, Chicago ; Master R. O. Hughes, Chicago ; Alex. Eger, Chicago.

Massachusetts.—Wm. Simpson, Springfield ; P. H. Gallaher, West Somerville ; Eli Gernwein, East Hampton ; Fairfield Whitney, Townsend ; Master Roger N. Perry, Worcester ; J. T. Bage, Springfield ; M. C. Keefe, Westfield.

Michigan.—Joseph Schwartz, Bay City ; Lester Carragan, Detroit ; C. N. Anderson, Detroit.

Minnesota.—C. D. Lyford, Minneapolis.

New Jersey.—B. F. King, Little Silver ; Master Miller N. Vleit, Hackettstown.

New York.—W. H. Ellwell, Walton ; J. W. Hanson, N. Y. City ; W. W. Williams, Ithaca ; Geo. P. Tabor, Dover ; J. C. Jenkins, N. Y. City ; Herman Belitz, N. Y. City ; W. N. Haverstick, N. Y. City ; Master Bellmont Bell, Brooklyn ; Master Hollingsworth Bell, Brooklyn ; G. W. M. Moll, N. Y. City ; Master W. H. Kelly, Albany ; Wm. F. Kerchner, N. Y. City ; W. R. Patten, Jr., Brooklyn.

Ohio.—R. C. Hill, West Alexandria.

Pennsylvania.—H. P. Brooks, Philadelphia ; G. F. Kamerer, Greenville.

Rhode Island.—Charles T. Frey, River Point—(58).

NEW MEMBERS ELECTED.

Leon A. Paquin, D. V. S., McGill '98, Webster, Mass.

E. H. Morris, D. V. S., McGill '96, Derby, Conn.

Jacob G. Pfersick, D. V. S., McGill '98, Greenfield, Mass.
Chester L. Blakely, M. D. V., Harvard '98, Augusta, Me.
Harrie W. Pierce, M. D. V., Harvard '00, Medford, Mass.
William T. White, M. D. V., Harvard '97, Newtonville, Mass.
E. W. Babson, M. D. V., Harvard '97, Gloucester, Mass.
Albert C. Knapp, D. V. S., N. Y.-A. '04, Bridgeport, Conn.
Wilbur J. Southey, D. V. S., N. Y.-A. '98, Bridgeport, Conn.
James H. Kelley, V. S., N. Y.-A. '93, New Haven, Conn.
Samuel S. Buckley, D. V. S., Maryland Ag. Col. '93, N. Y.-A. '96, College Park, Md.
C. E. C. Atkins, D. V. S., N. Y.-A. '00, Bridgeport, Conn.
George W. Meyer, D. V. S., N. Y.-A. '91, New York City.
William Arthur Young, D. V. S., N. Y.-A. '00, Utica, N. Y.
Robert J. Foster, D. V. M., N. Y. State '02, Fort Oglethorpe, Dodge, Ga.
Valentine M. Knapp, D. V. M., N. Y. State '04, Danbury, Conn.
Mulford C. Thompson, D. V. M., N. Y. State '05, Bangal, N. Y.
Clarence E. Shaw, D. V. M., N. Y. State '01, Brooklyn, N.Y.
Walter J. Taylor, D. V. M., N. Y. State '06, Forest Home, Ithaca, N. Y.
F. W. Andrews, D. V. M., N. Y. State '05, Mt. Kisco, N. Y.
C. R. Behler, M. D. C., Chicago '04, Nampa, Idaho.
N. Elwood Neilson, M. D. C., Chicago '06, Chicago, Ill.
Charles A. White, M. D. C., Chicago '94, Chicago, Ill.
Wm. E. von Nordheim, M. D. C., Chicago '05, Wahoo, Neb.
Charles Henry Beers, M. D. C., Chicago '06, Waterbury, Conn.
Eldridge N. Brown, M. D. C., Chicago '06, Nashville, Tenn.
F. C. Grenside, V. S., Ontario '79, New York City.
Theodore S. Rich, V. S., Ontario '91, Pueblo, Col.
Russell A. Stephens, D. V. M., Cincinnati '03, National Stock Yards, Ill.
E. S. Deubler, V. M. D., U. P. '05, Philadelphia, Pa.
John Reichel, V. M. D., U. P. '06, Philadelphia, Pa.
K. W. Stonder, D. V. M., Iowa State '05, Pullman, Wash.
W. E. Ralston, D. V. M., Ohio State '04, Pullman, Wash.
A. J. Damman, D. V. S., Wash. State '05, Ellensburg. Wash.
C. S. Philips, D. V. S., Wash. State '02, Mt. Vernon, Wash.
Lewis A. Patric, D.V. S., Wash. State '04, Snohomish, Wash.
R. Lee Rhea, D. V. S., K. C. '05, McKinney, Texas.

R. R. Clark, D. V. S., K. C. '05, Newport News, Va.
J. Arthur Goodwin, D. V. S., K. C. '06, Napoleonville, La.
Peter Simonson, D. V. S., K. C. '05, Fremont, Neb.
Charles Eastman, D. V. S., K. C. '04, San Luis Obispo, Cal.
Wilhelm Scheumacher, M. D. V., McKillip '01, Durango, Col.
J. C. Gill, M. D. V., McKillip '04, Clarksville, Tenn.
F. W. Morgan, M. D. V., McKillip '06, Chattanooga, Tenn.
Wm. Hilton, V. S., M. D. V., McKillip '06, Winnipeg, Man.
C. D. McGilvray, M. D. V., McKillip '01, Winnipeg, Man.
J. P. Molloy, M. D. V., McKillip '03, Morris, Man.
W. W. Dimock, M. S., D. V. M., N. Y. State '05, Santiago de las Vegas, Cuba.

The application for membership of Dr. Fred W. Porter, Tampa, Florida, was held over because it was not in proper form.

The proposition to place the name of Dr. Schmidt, Kolding, Denmark, on the list of honorary members was received, and will take the regular course.

The application of Dr. George E. Corwin, Canaan, Conn., was laid over for one year.

Drs. Harry D. Gill, New York City; W. L. LaBaw, Boston, Mass., and Edward J. Nesbitt, Poughkeepsie, N. Y., were reinstated to active membership.

The resignations of Drs. James Vincent, Shenandoah, Iowa, and T. B. Pote, St. Louis, Mo., were accepted.

Dr. Wm. H. Wray, London, England, was placed upon the honor roll, as was also Dr. W. H. Hoskins, Philadelphia, Pa.

The meeting adjourned for lunch at noon, and reconvened promptly at 2 o'clock.

The report of the Executive Committee, held on Monday afternoon, was then submitted.

The Committee on Diseases recommended through its chairman, Dr. Chas. H. Higgins, of Ottawa, Canada, in its report for 1905 that it appeared impracticable to continue their work, since it was impossible to present a comprehensive report of the conditions throughout the country, and that the custom of presenting individual papers upon specific subjects was not in conformity with its conception of the work which should properly be done by it. Therefore, when the proposed amendment to the by-laws abolishing this committee came up for discussion, Dr. Higgins spoke in support of the proposition; and he thought that if it were deemed best to continue it its duties should be clearly defined. He suggested as a line of work in

which it might be useful the classification of papers presented by members, thus bringing them before the Association in a more systematic and comprehensive form. Considerable opposition was expressed, however, to the proposition of annihilating this committee, and Dr. W. Horace Hoskins spoke eloquently of the grand work which this body had done in the past, and felt that it would be a backward step to abandon it.

Another proposed amendment to the by-laws was that "to amend Section 2, Article VI," which provided for the admission to membership of "those inspectors of the Bureau of Animal Industry, not otherwise eligible, who have acquired a permanent appointment to a full inspectorship." It developed in the discussion that while the men sought to be admitted were regarded as being worthy, it was at this time dangerous to establish the precedent unless more specifically set forth, and a limitation placed upon it. The matter was referred back to the Executive Committee for further consideration.

The report of the Committee on Intelligence and Education was an exhaustive one, and consisted of the following sections:

"The Value of Veterinary Hospitals upon Education," by Dr. W. L. Williams (read by Chairman Marshall).

"Federal Meat Inspection," by Dr. A. T. Peters (read by the Chairman).

"Examining Boards and Existing Laws," by Chairman C. J. Marshall.

"Veterinary Colleges," by Dr. George R. White.

The first three sections were presented on the first day, the last on Wednesday. Dr. Higgins thought that, while the sections presented by Drs. Williams and Peters were valuable in the extreme, they were out of place in the report of this committee, and in support of his contention read Section 2 of Article V, defining the duties of the committee. There could be no two opinions upon the interpretation of the by-law, and it is likely that such individual papers will hereafter find their proper place among original contributions.

The section dealing with the examining boards and laws governing the profession, by Chairman Marshall, showed a very extensive correspondence with the officials throughout the country, and the collection of accurate data from first hands, together with decisive recommendations for the advancement of work along these lines. In a later number of the REVIEW the tabulated article printed in the November, 1905, number of this journal will be revised and republished. In its preparation

the report of Dr. Marshall will be used largely as a basis, together with Handbook No. 12 of the Education Department of the State of New York, which has an excellent compilation of somewhat similar data. Our aim will be to make this a perfectly reliable condensed statement of all the laws, and the regulations governing examining boards in every State of the union.

The section on schools was the most thorough ever detailed before the Association, and Dr. White is deserving of the thanks of all veterinarians for the intelligence of his work and the energy with which he directed it. At the 1905 meeting his report consisted in the main in the presentation of the replies sent in by heads of the various schools in answer to questions propounded by the committee. This year a number of members living in proximity to the schools were asked to make an investigation of the statements contained in their replies with the object of ascertaining if their answers to the questions were being lived up to, and requesting each to make any suggestions as to the betterment of weak points in the schools. In every instance, save one, the replies showed that the statements were practically true, and the one exception was stated to be utterly untrue, and the committee recommended that its graduates be disbarred from membership in the Association. In two other instances, the committee found that they were very nearly approaching A. V. M. A. requirements, and it recommended that if during the coming session they fulfill their promises, the Association should consider their graduates as eligible.

It was shown that the rule that applications for membership shall be in the hands of the Secretary thirty days before the meeting was working well; that in 1905 (the first trial of the system) there were 19 applications on file, while in 1906—when the rule had become better advertised—there were 55. It was claimed that members were thus secured who were really desirous of joining, and did not rush in during the enthusiasm of a meeting, and that the records are proving that a better class of members are being secured by the new method, and are more apt to live up to their obligations. A motion made to suspend the by-laws so that applications might be considered at this meeting was opposed by Drs. Repp, Harger and others, and it was voted not to do so, the speakers remarking that nothing could be lost by them through having their applications take the regular course, and it would preserve the ideas underlying the adoption of the rule. The motion was lost by a large majority of "nays."

On Wednesday, the meeting opened promptly on time, and the Secretary presented the report of the Executive Committee held at 8 o'clock, which was followed by :

PAPERS AND DISCUSSIONS.

"Arecoline Hydrobromate," by Dr. P. A. Fish, Ithaca, N.Y., while interesting did not provoke much discussion, remarks of speakers being mostly confined to inquiries of the essayist as to certain details of its use.

"Glanders" was the magnet of the morning session, and it proved to be the very best and most thoroughly original consideration of the important subject ever brought out at a meeting in this country. It consisted of three papers :

"The Agglutination Method for the Diagnosis of Glanders," by Drs. V. A. Moore, Walter J. Taylor and Ward Giltner, Ithaca, N. Y.;

"The Agglutination Test in Practice," by Dr. George H. Berns, Brooklyn, N. Y., and

"The Control of Glanders in the Dominion of Canada," by Dr. J. G. Rutherford, Veterinary Director-General, Ottawa, Canada.

Dr. Moore's paper was an exhaustive *résumé* of the subject of agglutination as studied in his laboratory at Ithaca, together with a history of the method in Europe and details of its application and a statement of its apparent value.

In the early spring Dr. Berns became greatly interested in the diagnosis of glanders by the agglutination method through the accuracy with which Prof. Moore picked from about twenty specimens of blood sent him by Berns from as many horses the only three which proved clinically to be affected with the disease. By an understanding between the two, Dr. Berns fitted up a small laboratory in his Brooklyn infirmary and Mr. Cassius Way, assistant at Dr. Moore's laboratory, was secured to conduct a number of tests in Brooklyn upon the blood of glandered and exposed horses in the practices of Dr. Berns and other New York practitioners. The paper presented by Dr. Berns before this meeting was devoted to detailing the results of Mr. Way's work, and the conclusions of Dr. Berns were very favorable to the test, having many advantages over mallein and being very valuable in arriving at a diagnosis when used in conjunction with mallein. One great advantage is that the presence of fever does not affect the property of agglutination, and the degree of infection may be estimated by the power with which the agglutination takes place. With mallein the test is

largely destroyed when fever is present, and many practitioners remarked that in many of their cases there are several degrees of fever. Dr. Berns gave the statistics of 152 specimens of blood from as many horses, the majority of which were in the practice of the author, while the remaining ones were those furnished by practitioners in Greater New York and vicinity. The REVIEW will print Dr. Berns' paper, together with that of Dr. Moore, in the October number, and will therefore not attempt to further analyze it at this time.

Then came the voluminous and intensely interesting report of Dr. Rutherford, based upon the work of his most trusted inspectors, with the laboratory assistance of Dr. Higgins. He had formed some definite conclusions based upon these reports and his own observations, chief among which is the danger lurking in the "ceased-reacters," for while they may show every evidence of having thrown off the infection by failing to respond to mallein, they are capable of spreading glanders, and sooner or later give clinical evidence of the disease.

The discussion which followed was most educational and held the interest of the members just as long as time could be spared for it. Dr. Harger started it by reviewing many of the points brought out by the essayists, and cleared the field for action. He was followed by Drs. Wilcox, Noack, Cotton, Jewell, Law, Gill, Repp, Winchester, Dalrymple, Shaw, Berns, Ward, and others. In Dr. Harger's remarks he asked Dr. Merillat for a reiteration of a section of his report as Resident Secretary for Illinois, wherein he stated that not over 5 per cent. of exposed animals which reacted to mallein ever broke down with clinical lesions. Dr. Merillat was not present, but was informed by a member later of the inquiry, and on the following day arose and repeated his observations, which precipitated another discussion, participated in by a number of the members. The President had to shut off the discussion as being out of order. Later in the day Dr. Rutherford, who was out of the room when the *impromptu* discussion took place, asked the privilege of the floor to reply to Dr. Merillat, and asserted that while the latter was probably correct, that every one of them was a centre of contagion.

It appeared to many of the spectators that while Dr. Rutherford was correct from the standpoint of a sanitarian, private practitioners could hardly afford to adopt such sweeping measures as the destruction of horses which react after exposure without other symptoms of the disease.

"Our Insect Enemies" was the subject of a splendidly prepared paper by Dr. W. H. Dalrymple, of Louisiana; and it won him not only generous applause, but later a vote of thanks by the Association. We are glad to state that a copy of this paper is now in our possession, and will be published in the October number. Those taking part in the discussion were Drs. Monsarrat, Weber, and Ranck.

The Publication Committee reported through Chairman Lyman, giving details of the work done during the year, and making a number of recommendations for future committees. One of Dr. Lyman's recommendations met with considerable opposition, those speaking against it being Drs. Rutherford, Butler and Bell. He suggested that hereafter all papers and other documents presented to the Association shall not be permitted to be published in any newspaper or periodical until after the "Proceedings" have been distributed to the members. The suggestion is evidently inspired by the example of the American Medical Association, which has such a rule for the reason that the Association maintains a magazine called *The Journal of the American Medical Association*, and it is thus sought to extend its subscription list by restricting the publication of the original contributions presented at the meetings of the association to its pages, permitting their republication if credit be given to its dependent journal. To prohibit other journals from printing the more important papers read at the meetings of the A. V. M. A. until they appear in "Proceedings," often six months after adjournment, would be an injustice to the Association and a premium on retrogression. The early publication of important parts of the transactions—original papers, reports of committees, resolutions adopted—is of the utmost assistance to the spread of the influence of the organization and its numerical growth, and it should be encouraged by every legitimate means; surely nothing should be done to discourage it. It cannot be expected that enterprising professional periodicals will engage to publish them at all, if they are only to be gotten at second hand, months after their presentation.

Secretary Repp presented his report for the year, and drew attention to many things looking to the efficiency of the office. He showed the affairs of the organization to be in better shape than ever before; there were fewer suspensions for non-payment of dues, and a better feeling in general among the membership; great hardship is experienced in securing contribu-

tions to the annual program, and this year after appealing repeatedly without adequate result he was compelled to assign subjects to individuals. He closed by thanking all for their uniform courtesy and assistance, and by announcing the termination of his candidacy for reëlection, as other duties made it impossible for him to longer serve in the office.

Treasurer White gave an account of his stewardship by giving every item of receipt and disbursement. Briefly his report showed that the receipts for the year had been $1,900, balance on hand at 1905 meeting, $10.44, total $1,910.44. Disbursements $340.12, leaving on hand $1,570.32, and he produced a certificate from a Nashville bank showing a deposit of this amount to his credit. He had received at this meeting cash to the amount of $509.12, which made a grand total of $2,079.44. He had on hand vouchers for bills amounting to $1,230.16—leaving cash on hand $849.28.

The Finance Committee reported after examining the books that they had found them correct, but criticized the system of bookkeeping, which they considered unintelligent to those not accustomed to them.

ELECTION OF OFFICERS.

This was the first working of the new by-law creating a nominating committee composed of all the ex-Presidents in attendance upon the meeting. They were required to nominate at least three members for the office of President, ten at least for Vice-Presidents, two each for Secretary and Treasurer, the names to be presented in alphabetical order, and nominations from the floor may be made in addition.

For President the Committee—composed of ex-Presidents Robertson, Hoskins, Butler, Winchester, Stewart and Bell—placed the names of Drs. Dalrymple, Law and Reynolds before the Association. On the first ballot Dalrymple received 37, Law 36, Reynolds 6. The President decided that no one had received a majority of all the votes cast, and a new ballot was ordered, which resulted as follows: Dalrymple 37, Law 44, Reynolds 2. Dr. Law was declared elected.

To fill the five offices of Vice-President, the following names were submitted: Drs. Ackerman, Bland, Brenton, Cooley, Jensen, Melvin, Merillat, Monsarrat, R. C. Moore, Noack, and Rutherford. When the ballots were counted the following were found to have been elected: Ackerman 35, Jensen 35, Merillat 43, Monsarrat 36, Rutherford 71.

For Secretary, Drs. Lyman and Ranck were placed in nomination, Lyman receiving 47 votes, Ranck 33.

For Treasurer, George R. White and C. J. Marshall were named, but the latter withdrew and White had a walk-over.

The officers for the ensuing year are therefore as follows:

President—James Law, New York.
First Vice-President—J. G. Rutherford, Canada.
Second Vice-President—L. A. Merillat, Illinois.
Third Vice-President—W. T. Monsarrat, Hawaii Ter.
Fourth Vice-President—E. B. Ackerman, New York.
Fifth Vice-President—H. Jensen, Nebraska.
Secretary—Richard P. Lyman, Connecticut.
Treasurer—George R. White, Tennessee.

REPORTS OF RESIDENT STATE SECRETARIES.

Dr. Nelson S. Mayo reported verbally for Cuba, as did Dr. W. T. Monsarrat for Hawaii. Reports were read by the Secretaries for Connecticut, Kansas, Kentucky, Pennsylvania, Tennessee, Massachusetts and Illinois, while reports were forwarded to the Secretary and were referred to the Publication Committee for Wisconsin, Porto Rico, Rhode Island, Michigan, Maryland, Maine, Colorado and Arkansas. The report for Illinois by Dr. Merillat was a very vigorous instrument, and dealt with Dr. Ostertag's strictures on American schools with gloves off. He also gave an interesting account of the condition of practice in Chicago, with an estimate of the part played by the automobile in competition with the horse. Incidentally he looked into the schools of his state from the standpoint of one who knows, having been connected with one for years in an executive and teaching capacity, and is at present associated with the other as a teacher. He told of their good points and of their deficiencies, and made as strong an arraignment of their laxity as we have heard from any source.

An interesting discussion not on the program developed when Dr. Rutherford introduced Dr. Adrien Loir, a nephew and laboratory assistant of Louis Pasteur. The Doctor is a professor in Paris, but during his long vacation has been engaged by the Canadian Government to work in the laboratory of the Department of Agriculture. He is regarded as a great expert with rabies, and he was asked to address the meeting. Although it was his maiden speech in the English language, he gave an interesting account of his mission to South Africa to diagnose and repress a disease thought to be hydrophobia which was rapidly

becoming alarmingly prevalent in that country. After he had completed his narrative, he was kept very busy by the members answering knotty questions in connection with rabies. He seemed to grasp every query with lightning speed, and he answered them without a moment's hesitation. Much amusement was provoked by one of these rapid rejoinders. A member wanted to know how infection could occur in the instance of dumb rabies, where the paralyzed lower jaw prevented the animal from biting. Before the question was wholly spoken, the little Frenchman said: "Why, in taking ze bone out of ze throat." Dr. Rauck asked if is were possible for infection to take place through the mother's milk, and told of a case which came under his observation, where a bitch was nursing several puppies. In a few days she developed symptoms of rabies and died. The pups were disposed of and sent to various places. In the usual time every pup died of rabies, in one case after biting seventeen persons. Diagnoses were made by the finding of the Negri bodies and by inoculation. How else did they become affected than through the milk, as the most diligent search failed to disclose the slightest abrasion upon the skin. The inquiry had not died away when Dr. Loir replied that the disease had probably been transmitted to the offspring by the mother licking the open umbilicus. The discussion was entered into by Drs. Rutherford, Lamb, Ridge, Ranck, Lukes, Dalrymple, Baker, Grenside and others.

The Association tendered Dr. Loir a vote of thanks for his valuable talk.

Dr. James B. Paige, of Amherst, Mass., was called upon for his paper on "The Angora Goat and Sheep Industry of New England in Danger," and responded by turning it over to the Committee on Publication, he believing that the great stress upon the program could be relieved by doing so, and those interested could read it in the printed "Proceedings." He was requested from all over the room to read his paper, but adhered to his position.

The meeting then adjourned until 8 P. M., when a large number again assembled to hear Dr. A. T. Peters' paper on "The Eradication of Mange among Cattle in the West." It was illustrated by many stereopticon views, which made it intensely interesting and instructive, and it was well discussed by Drs. Rutherford, Tait Butler, Mayo and others.

After Dr. Peters' session, Dr. Richard Ebbitt, of Nebraska, presented the subject of "Tuberculosis in Swine," indicating

its vast increase throughout the country. It was discussed by Drs. Mohler, Tait Butler, Reynolds, and others.

Then Dr. Charles H. Jewell, the official representative of the U. S. Army, stationed at Fort Riley, Kansas, brought forth his paper on "The Veterinary Service of the United States Army and the Military Veterinarian," which our readers will find in full in this number of the REVIEW in the "Army Veterinary Department." It was discussed by Drs. Budd (chairman of the Army Committee of the A.V. M. A), Law, Harger, Rutherford, and others. It was suggested that the Army Legislation Committee be broadened so as to include all judiciary matters in which the Association is concerned.

On Thursday morning the convention assembled promptly at 9 o'clock, and the Secretary presented the report of the Executive Committee held at 8 o'clock. The Committee recommended that the charges against Charles Ellis, St. Louis, Mo., be sustained, and that he be expelled from membership for advertising in violation of the code of ethics, which was carried by the Association. It recommended that Dr. W. F. Harrison, of Bloomfield, N. J., be reinstated to active membership. Carried. It was recommended that the various recommendations of the officers and committees be referred to the incoming Executive Committee. Carried. It was recommended that the resignation of Dr. E. M. Nighbert, Lynchburg, Va., be not accepted. Carried.

After the Executive Committee's report had been disposed of, Dr. Austin Peters, of Boston, read a paper on "The City Milk Supply," which was exhaustively discussed by Drs. Butler, Gill, Hoskins, Ridge, Piatt, Robertson (Chicago) and Marshall.

Dr. W. L. Williams, Ithaca, N. Y., then came forward with a paper entitled "Notes on Roaring," in which he reviewed the various surgical attempts to relieve the condition from ancient times down to the rather numerous methods in vogue among American veterinarians during the past twenty years, dealing especially with those which are on trial at the present time. He minutely described the technic of his own method, which he claimed to be merely a modification or extension of others which have been practiced with varying success. Those who discussed the subject were Drs. Gill, Harger, Merillat, Newton, and Williams.

"Present Status of the Crusade Against the Southern Cattle Tick" was to have been read by Dr. Tait Butler, of North

Carolina, but instead he turned it over to the Publication Committee, taking the platform and delivering a vigorous speech in behalf of the proposition to lift the great curse upon the cattle industry of the Southern states. He told of the recent Congressional appropriation of $82,500 for this purpose, and announced that the work of education and eradication had already begun. To those who have given this subject but little thought, the magnitude of the destruction wrought by the *Boöphilus annulatus* is unappreciated. Dr. Butler estimates that it annually causes a direct monetary loss below the Federal quarantine line of $40,000,000.

Dr. Connoway, of Missouri, sent in his paper on "Recent Developments in Immunization Against Southern Cattle Fever," but as he was not present it was turned over for publication.

"Dissemination of Tubercle Bacilli by Insects a Source of Contagion," by Dr. S. E. Weber, Lancaster, Pa., was next listened to with much interest, and a new line of thought was opened up in a prominent manner.

Several other very important papers were upon the program, but all had to go over to the Publication Committee. Among these were Pearson's "Veterinary Schools of Europe," Hughes' "Veterinarian as a Business Man" (published elsewhere in this number of the REVIEW), Rich's "Management of Tuberculosis in Vermont," White's "Veterinary Education in the United States," and others.

The Committee on Resolutions rendered their report, and after being received, the sections were taken up and adopted:

RESOLUTIONS ADOPTED.

Congressional Liberality.

WHEREAS, Our Federal Congress in its recent session has dealt very liberally with lines of work in which this Association is interested, and

WHEREAS, We wish to express our appreciation of the wisdom and liberality thus shown; therefore, be it

Resolved, That we take this means for thanking Congress,

1st. For passing the new meat inspection law, which we believe will prove even more effective than the one previously enforced and which is perhaps broader and more stringent than the meat inspection laws of any other country;

2d. For making an appropriation of unparalleled liberality to enforce this new inspection law;

3d. For appropriating generous funds for work in exterminating the Texas fever cattle tick;

4th. For providing for the supervision and standardization of various toxines and vaccines by the Bureau of Animal Industry ;

5th. For increasing by $15,000 the annual appropriation to each of our state agricultural colleges and experiment stations, a part of which will be available for the work of station veterinarians.

Texas Fever.

WHEREAS, A coöperative effort has been inaugurated by the United States federal authorities and those of the infected Southern states below the quarantine line with a view to extermination of the common cattle tick *(Boöphilus annulatus)* from those states, and

WHEREAS, The success of such effort will be of incalculable benefit to the cattle interests of the entire United States, and

WHEREAS, An appropriation of $82,500 has been secured through a bill introduced into Congress by the Hon. Joseph E. Ransdell, of Louisiana, and this splendid result has been largely brought about by the efforts of the Association of Cotton States Commissioners, representatives of Southern experiment stations, state boards of agriculture, state and station veterinarians ; therefore, be it

Resolved, That we express our appreciation of the great significance of this movement, our realization of its enormous importance to the cattle interests of the United States and Canada, and that we heartily congratulate the Hon. Joseph E. Ransdell, Congressman from Louisiana, the Association of Cotton States Commissioners, our veterinarians, experiment station and agricultural college authorities, and all others who took an active part in forwarding this movement of so great national and international importance.

Dr. D. E. Salmon.

WHEREAS, The United States with its vast territory and wide range of climatological conditions has found in its wonderful growth many serious and intricate problems with which it has been compelled to deal. Among these have arisen large and difficult problems relating to our live-stock interests. The health, the wealth and prosperity of this people have been intimately related to the whole sphere of animal husbandry, and the preservation of our live-stock interests in all the various lines involved, touches the well-being of every citizen of this country, and

WHEREAS, Under the direction of one of our members there was developed in the United States a federal control department that has achieved a solution of problems in state control work which older nations of the world had utterly failed to solve, and work so well done that it stands almost without a peer, giving the richest returns to our people; therefore, be it

Resolved, That we thus publish our appreciation of this magnificent work, our opinion of its enormous value to the United States and to the world; and give credit to one of our members whose earnestness, wisdom and energy, and wonderful devotion to his work brought about such splendid results; and be it further

Resolved, That in thus honoring the more than a score and a half years of faithful service by Dr. D. E. Salmon as Chief of the United States Bureau of Animal Industry we are doing ourselves credit and rendering an honor which is justly due, and we desire to note in the annals of our Association records our sincere appreciation and commendation of our esteemed and greatly honored fellow-member, Dr. Salmon.

[Dr. Bell in speaking upon this resolution stated that he had received a letter from Dr. Salmon on the eve of his (Bell's) departure for the convention, in which he said: "I hope you will tell the Association in superlative terms of the deep disappointment which I feel at missing this meeting—a disappointment which is made all the more intense by my prospective departure for a new field of work in a distant country. The sympathy and assistance which the veterinary profession of the United States extended to me throughout my official career will always be a pleasant memory and a source of gratification; and I hope to be able in some way to keep in touch with the profession and to feel that I am still a part of it." Dr. Bell's remarks were ordered included with the resolution in the minutes.]

Dr. A. D. Melvin.

WHEREAS, Dr. A. D. Melvin has been appointed Chief of the United States Bureau of Animal Industry, and

WHEREAS, In making this appointment, ability and long service in the Bureau have been rightfully considered, and

WHEREAS, By long personal experience in the several divisions of the Bureau service, and by direct contact with all subordinate officials, while performing the duties of Assistant Chief of Bureau he has engendered general confidence as an executive officer; be it

Resolved, That we, the American Veterinary Medical Association, in convention assembled at New Haven, Conn, August 22d, 1906, do fully and heartily endorse the appointment of Dr. A. D. Melvin, our fellow-member, to the most important professional position open to a veterinarian in the service of the United States Government.

Dr. J. G. Rutherford.

WHEREAS, The Dominion of Canada has recently honored our profession, and this Association, by making our distinguished colleague, Dr. J. G. Rutherford, present Veterinary Director-General of Canada, Live Stock Commissioner for the Dominion; therefore, be it

Resolved, That we express our appreciation of the honor thus done us; and of the wisdom displayed on the part of the Canadian Government; and of the deep significance which this and similar movements have upon the future work and relations of the veterinary profession to national and international live stock interests, and be it further

Resolved, That we heartily endorse the action of the Dominion and congratulate Dr. Rutherford upon this great honor deserved and received.

Veterinary Schools and Inspection in Canada.

WHEREAS, Canadian veterinarians have apparently succeeded in placing the veterinary colleges under immediate government control, in doing away with two-year courses; and insuring the development and progress of institutions which will give great honor to our profession, and

WHEREAS, The veterinary inspection service of the entire Dominion has been unified and most efficiently organized during very recent years; therefore, be it

Resolved, That we heartily congratulate them upon the splendid spirit of progress thus shown and their ability to accomplish what they undertake for the good of the profession. And be it further

Resolved, That we tender the hearty support of this Association in any further work of this kind which they may undertake.

Canadian Veterinary Control Work.

WHEREAS, In the presentation of Canadian State control work with glanders by Veterinary Director-General Dr. J. G. Rutherford, it is apparent that the Canadian Government has undertaken control work with infectious diseases of animals upon a scale that is highly creditable and in a way commensurate with the importance of the work, and

WHEREAS, Actual results shown in this report plainly justify the heavy expenditures incurred; therefore, be it

Resolved, That we commend those in higher Canadian Government authority for thus generously supporting this work and commend the general organization and plan of the Canadian work to the consideration of the federal authorities and to our various state authorities in so far as it may be applicable to their conditions and not already in force.

The Committee on Legislation.

WHEREAS, We feel that it is highly important for this Association and the profession which we represent to come into closer and more influential relations with our state and federal legislative bodies; therefore, be it

Resolved, In accordance with the recommendation expressed by President Lowe in his annual address, that the scope of the committee on Army Legislation should be broadened so as to include all legislation which affects the interests of our profession, and the live stock interests of the several countries represented in our Association, and that the title given this committee should be altered accordingly.

Death of James B. Raynor.

WHEREAS, This Association has suffered a great loss in the death of one of our oldest and most universally beloved members, Dr. James B. Raynor, of Westchester, Pennsylvania, who attended the first meeting of this Association ever held, and who was ever a faithful attendant, and loyal worker until his death at the ripe age of 78 years. Dr. Raynor was a most successful practitioner and very deeply respected by all who knew him. Therefore, be it

Resolved, That we thus express our sorrow and sense of loss; that a copy of this resolution be sent to his family, and that it be published in the permanent records of this Association.

Local Committee of Arrangements.

Resolved, That we tender a vote of thanks to the members of our local committee of arrangements, to the hotels and all who aided for the very satisfactory provisions made for the work of the Association, and the generous spirit of hospitality as shown in their arrangements made for the social entertainment.

W. Horace Hoskins.

WHEREAS, Our distinguished fellow-member, Dr. W. Horace Hoskins, completes at this meeting a period of membership

covering twenty-five years and a record of twenty-six consecutive meetings attended, having never missed a meeting since joining the Association; having been always ready to work in any capacity or place, having served this Association for several years as Secretary, and then as President, and always as a hard-working, active member; therefore, be it

Resolved, That as his name now goes on the honor roll of active members we express our deep appreciation of those long years of faithful service and his intense loyalty to the profession.

Bureau of Animal Industry Inspection Service.

WHEREAS, The United States Bureau of Animal Industry inspection service has been the subject of repeated and rigid investigation on account of its relation to the recent packing house investigations and has not been seriously criticised in any case; therefore, be it

Resolved, That we congratulate this branch of the United States federal service on its creditable record, and express our pleasure in this showing on the part of an important branch of our federal veterinary service.

Representatives of Other Bodies in Attendance.

WHEREAS, We feel that it is a highly creditable procedure for state boards of agriculture, state live-stock sanitary boards, for the various branches of federal veterinary service, veterinary associations and foreign governments, to send representatives to the meetings of this Association, as well as a high compliment to the importance of our work, and

WHEREAS, We feel that it is a matter of great importance for us as individual members of this Association to get as many points of contact as possible with national and state affairs in which we are interested; therefore, be it

Resolved, That we extend a vote of appreciation and congratulation—appreciation for the recognition thus given the work of this Association and to the importance of the veterinary service in its several fields, and of congratulation for the spirit of progress and of liberality thus shown.

Dr. R. P. Lyman.

WHEREAS, Dr. R. P. Lyman is now retiring from the position of Chairman of the Publication Committee after two years of faithful and efficient service in an arduous work; therefore, be it

Resolved, That we express our appreciation of this faithful service by tendering him our sincerest thanks.

Veterinary Progress in Foreign Lands.

WHEREAS, A survey of the recent foreign veterinary medical field brings into bold relief matters of world-wide importance and in which we as a profession are vitally interested; therefore, be it

Resolved, That we express our appreciation and tender a compliment to our foreign colleagues for the magnificent work in progress with anti-tuberculosis vaccines for cattle and for the great encouragement which this work is giving to the entire medical world in relation to the prevention and treatment of human tuberculosis; for the very creditable work that has been done in connection with the discovery with the Negri bodies and other good research in connection with rabies, and various other diseases of domestic animals.

The adoption of the resolutions left only time for the installation of the new officers, and in taking possession of their posts each returned thanks for the honor conferred and pledged their best efforts for the good of the Association.

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THE CLINIC.

The clinic was held in a tent at the rear of Harmony Hall on Friday, 24th, beginning promptly at 8 o'clock. The arrangements were the best that the Association has ever had prepared for its accommodation, while the management was most excellent. An innovation was admission by card, and these were issued only to members, visitors and attendants, thereby keeping out the curious crowds who merely obstruct the work and obscure vision. A special policeman was stationed at the door, and he only admitted those who were in possession of admission cards or could sign professional registration cards. In this way the tent (large enough for half a dozen operations at one time and for about 200 persons) was never crowded and a good view could be obtained of all that transpired. Another improvement over former conditions was the stretching of a rope around each operator and the subject, thus keeping the people from crowding too closely. It was aimed to demonstrate operations under varying conditions, by confining animals by different means. At one end there was the Kansas City Veterinary College operating table, and it was in constant use, illustrating its application for operations upon different parts of the body. It is a comparatively inexpensive table, well adapted for veterinarians who have limited room at their disposal. In

the centre of the space was a Bradwood Humane operating table, illustrated in the advertising department of the REVIEW, and several operations were performed on it. At the other end were beds of nice white straw, and here a large number of horses were cast for the majority of the operations. Dr. George R. White, of Nashville, did the throwing with side-lines, and everybody commented upon the rapidity, ease and safety with which the horses were laid down, and the security with which they were tied when in the recumbent position. Modern methods marked the work of the skilful surgeons—everything sterilized, anæsthesia in almost every case (general when necessary, local when possible), the latest and best instruments, and every equipment for doing the best work. A local veterinarian who seems to be at dagger's point with every other veterinarian in the state attempted to make trouble by sending an officer of the Humane Society to arrest somebody, the officer claiming that he had been informed that unnecessary operations were being performed, or that animals were being caused to suffer pain simply to demonstrate surgical methods. He read the word "President" on Dr. Lowe's badge, and thought he would prove a good one to lock up, but when shown what was being done he changed his mind, and remained to witness many of the procedures.

The local committee are entitled to and unstintingly received the greatest praise for the success which crowned their untiring efforts to have every cog in the intricate machinery work smoothly, and the ideal clinic which we have all been hoping for was as nearly secured at New Haven as could possibly be expected in the few years they have been in operation. Each year has marked a distinct advance; never has there been a backward step. From the crude effort at Omaha in 1898 to the event at New Haven is a long stride in a very short time. The one lacking facility for demonstration of a very useful means of restraint for the majority of operations in every-day practice was an improved "stock," and if an up-to-date operating table for small animals had been installed it would have added much to the equipment. But this is not offered in criticism, which was absolutely disarmed; it is simply suggested for the consideration of future committees. The serious drawback at Cleveland of stump-speaking by some of the surgeons, taking attention from valuable demonstrations by addressing groups upon elementary surgery and anatomy, was eliminated completely, and one surgeon who attempted it (merely through

interest in his subject) was promptly checked when he had exceeded the limit necessary to explain his methods.

The local committee of arrangements consisted of Dr. E. C. Ross (chairman), Dr. J. H. Kelley and Dr. Harrison Whitney, of New Haven; Dr. R. D. Martin, Bridgeport; Dr. H. E. Bates, South Norwalk; Dr. Thomas Bland, Waterbury; Dr. G. W. Loveland, Torrington, and Dr. R. P. Lyman, Hartford.

The following brief *résumé* of the demonstrations is offered as a summary of what was done, without any effort at detailed description:

I.—Bay gelding, roarer; diagnosis by digital exploration by Dr. W. L. Williams; cast upon bed of straw and secured with side-lines by Dr. George R. White. Lysol injected subcutaneously at seat of operation. Surgeon, Dr. H. D. Gill, New York City.

II.—Roan mare, cartilaginous quittor, inside off forward foot. Secured on Kansas City Veterinary College operating table. Cocaine locally. Method, modified Bayer operation. Surgeon, Dr. R. C. Moore, Kansas City, Mo.

III.—Bay gelding, roarer. Cast upon bed of straw and secured with side-lines by Dr. White. Anæsthetized with chloroform by Dr. Chas. H. Jewell, of Fort Riley, Kansas. Surgeon, Dr. W. L. Williams, assisted by Dr. L. A. Merrilat, of Chicago, Ill.

IV.—Skewbald gelding, intrascrotal champignon. Cast upon a bed of straw and secured with side-lines by Dr. White. Surgeon, Dr. S. J. J. Harger, of Philadelphia, Pa., assisted by Dr. Fernsler.

V.—Gray mare, incurably lame from ringbone left hind. Operation, high plantar neurectomy. Confined on Bradwood Humane operating table. Surgeon, Dr. H. D. Gill.

VI.—Black gelding, roarer. Cast and secured with side-lines by Dr. Klotz. Anæsthetized with chloroform. Surgeon, Dr. W. L. Williams, assisted by Dr. E. B. Ackerman, Brooklyn, N. Y.

VII.—Bay gelding, roarer. Confined on K. C. V. C. operating table. Anæsthetized with chloroform by Dr. Jewell. Surgeon, Dr. L. A. Merillat, assisted by Dr. James Robertson, Chicago.

VIII.—Black gelding, carcinoma of penis. Operation, amputation. Cast and secured by Dr. White. Anæsthetized with chloroform. Surgeon, Dr. Merillat.

IX.—Bay gelding (trotter), exostosis inside off knee. Opera-

tion, median neurectomy. Cast and secured by Dr. White. Local anæsthesia. Surgeon, Dr. Harger, assisted by Dr. Chesley.

X.—Demonstration of harness for the operation of castration in the standing position. Dr. Geo. R. White.

XI.—Gray gelding, cartilaginous quittor. Operation, full Bayer method. Local anæsthesia with cocaine. Confined on K. C. V. C. operating table. Surgeon, Dr. Geo. H. Berns, Brooklyn, assisted by Dr. Thomas E. Smith, Jersey City, N. J.

XII.—Gray gelding, dentigerous cyst at base of off ear. Cast and secured by Dr. White. Anæsthesia with chloroform. Surgeon, Dr. Williams.

XIII.—Black gelding, fistulous withers. Confined on Bradwood table. Surgeon, Dr. Gill.

XIV.—Gray mare, demonstration of naso-œsophageal intubation, soap being used as a lubricant. Surgeon, Dr. George R. White.

XV.—Brown mare, carious 4th molar tooth, left side. Operation, trephining and repulsing. Cast and secured by Dr. White. Chloroform anæsthesia by Dr. Jewell. Surgeon, Dr. Merillat.

XVI.—Brown gelding, roarer. Cast and secured by Dr. White. Surgeon, Dr. Gill, assisted by Dr. R. A. McAuslin, Brooklyn, N. Y.

XVII.—Bay gelding, 9 years old, black points except white off hind pastern. Nodulated lymphatics inside off hind leg extending from hock into inguinal region. General diagnosis, melano-sarcoma. Sections taken by Dr. John R. Mohler, B. A. I., Washington, D. C., who will report result of microscopical examination. Operation not advised.

XVIII.—Gray mare, general melanosis about anus and vagina, tumors of large size. Cast by Dr. White. Anæsthesia with chloroform by Dr. Jewell. Surgeon, Dr. Merillat, assisted by Dr. W. E. Wight, Pittsburgh, Pa.

XIX.—Gray gelding, pectoral fistula. Cast by Dr. White. Anæsthetized with chloroform. Surgeon, Dr. Harger, assisted by Drs. Lukes, Martin and Mitchell.

XX.—Demonstration of special anæsthetic cone by Dr. J. A. McLaughlin, Providence, R. I.

XXI.—Bay gelding, lame off forward leg. History, fell, afterwards becoming lame, was treated and turned out for three months, but did not improve. Diagnosis by Dr. A. H. Baker, Chicago: naviculararthritis, history ignored. Advice, plantar neurectomy.

XXII.—Brown mare, carious 4th molar tooth. Operation, repulsion, tooth split with chisel. Confined on K. C. V. C. table. Local anæsthesia with 15 per cent. stovaine. Surgeon, Dr. Williams, assisted by Drs. Knapp, Merillat and Andrews.

XXIII.—St. Bernard dog, fibroid tumor left side neck, weighing two pounds. Operation, extirpation. Anæsthesia with chloroform through McLaughlin cone. Surgeon, Dr. Harry Lukes, Springfield, Mass. The dog died on 27th.

XXIV.—Bay gelding, ringbone off forward leg. Operation, high plantar neurectomy. Local anæsthesia with cocaine. Surgeon, Dr. C. H. Perry, Worcester, Mass., assisted by Drs. W. T. White and F. J. Babbitt.

XXV.—Brown mare, infected navicular bursa from nail prick. Operation, resection flexor pedis perforans. Confined on K. C. V. C. operating table. Chloroform anæsthesia. Surgeon, Dr. Williams, assisted by Drs. Knapp, Thompson and Andrews.

XXVI.—Brown mare, carious 4th molar tooth. Cast and secured by Dr. White. Operation, trephining and repulsing; external alveolar plate removed with chisel. Local anæsthesia with stovaine. Surgeon, Dr. Andrews.

XXVII.—Black gelding, roarer. Cast and secured by Dr. White. Chloroform anæsthesia. Surgeon, Dr. Williams.

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PATHOLOGICAL EXHIBIT.

Through the kindness of Dr. W. Reid Blair, Pathologist of New York Zoölogical Park, the following interesting specimens were offered for the inspection of the members and visitors. They were rare conditions, as a rule, and it was a thoughtful kindness for Dr. Blair to thus permit his less fortunate colleagues to share his splendid opportunities.

1. Actinomycotic tumor of salivary gland, from grizzly bear.

2. Several specimens of invaginated bowel, from monkeys, coyote and wolf.

3. Hart of wolf showing blood filariæ *(Filaria immitis)* in right ventricle.

4. Liver, spleen, kidneys and lungs of a Gibbon, showing generalized miliary tuberculosis.

5. Heart of prong-horned antelope showing *Cysticerci cellulosa.*

6. Uterus, fallopian tubes and ovaries of a mule deer,

showing all infected with tape-worm hydatids (*Cysticercus tenuicollis*).

7. Numerous specimens of large hydatid cysts from Asiatic mountain sheep, American deer and antelope.

8. Tumor, myxo-sarcoma, from abdominal cavity of Japanese raccoon-dog.

9. Cystic liver from a deer.

10. Actinomycosis of liver and diaphragm, from an American prong-horned antelope.

11. Lung of elk, showing thousands of bronchial filariæ in the bronchial air tubes.

12. Thirty-two feet of tape-worm, from a Polar bear.

13. Numerous specimens of blood filaria from sea-lions, monkeys, and wolf.

14. Large colon of a black pug-dog, showing hæmorrhagic colitis due to infection with the true whip-worm (*Trichocephalus depressiusculus*), hundreds of specimens of the worm present.

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THE BANQUET.

The banquet occurred on Thursday evening in the large dining hall of the Tontine, when one hundred and ninety-two guests seated themselves around long rows of tables which extended into adjoining rooms. There was the largest number of ladies present that ever graced these occasions, and the *menu* was quite acceptable.

Dr. J. G. Rutherford was the toastmaster, and a royal one he proved, for his fluent oratory and fund of wit kept the diners in good trim, and the setting he threw around the speakers in his introductions was not the least enjoyable part of the program.

In introducing the first speaker, Dr. W. H. Dalrymple, he fairly smothered him with words of praise for the great work he has done in the South, not only for the people of that section, but incidentally for the eminent service he has rendered his profession in creating an interest in its great possibilities for good and creating a high respect for those who constitute its representatives. The speaker rose to respond amid the deafening applause of the guests, and he gave them a clear insight into the great problems confronting the profession in the South, and the awakening of the people to the great work which has been accomplished through the discovery of the source of contagion of yellow fever, Southern cattle fever, and other scourges which are being made to disappear under modern sanitary medicine.

Then the toastmaster introduced Prof. W. H. Brewer, of the Agricultural Department of Yale University, who delivered an address full of interest to students of comparative medicine and animal husbandry. The toastmaster stated in his introduction that Prof. Brewer had predicted the two-minute trotter nearly forty years ago, and in explanation of this the speaker said that the thoroughbred running horse was the only horse which had reached its limitations, and gave statistics to show that a very large number of them had approached very close to the record, while only a few trotters and pacers have gone extremely fast. He showed great familiarity with the history of sanitary medicine, and congratulated the veterinarian upon the honor he possessed in being a veterinarian, as it is a noble calling, with vast opportunities before it. He believed our chief patient, the horse, was well suited for human alimentation, and thought the old family horse, fatted and prepared for the butcher, would be as luscious, if not more so, than the family cow.

"Veterinary Education and the Stock Owner" was the subject assigned the Hon. Mr. Holcomb, and no one could have treated it in a more entertaining manner. He believed thoroughly in the veterinary profession, and was in hearty sympathy with the profession of the state in its efforts to secure adequate legislation.

Following this "The Silver Anniversary" of Dr. W. Horace Hoskins was announced by the Chair in words which were re-echoed by all who know what this loyal member of the A. V. M. A. has accomplished in the twenty-five years that he has been a member, and during which long period he has never failed in attendance upon its meetings, wherever he has had to journey. He spoke feelingly of the growth of the organization and the wonderful work which it has accomplished in that time, believing it has achieved more good than any similar organization in the world.

When he had concluded his remarks Dr. Wm. Herbert Lowe, the retiring President, caught the eye of the Chairman, and rising to his feet paid high tribute to Dr. Hoskins. At a signal there was brought to the latter's table an elegant and immense cut-glass punch-bowl, with individual glasses, and it was tendered to Dr. Hoskins by the members through Dr. Lowe in recognition of the great record which he had just completed and as a token of their appreciation of his services in behalf of the Association and the cause of veterinary medicine.

The recipient rose to thank his friends, but he was entirely

too much overcome by emotion, and the few words which he uttered in recognition of their gift were by no means an index to the feelings which possessed him.

The Hon. Wm. H. Warner spoke to the toast of the "State of Connecticut," which he did in a pleasing manner.

Dr. Tait Butler then eloquently addressed the banqueters, responding to the sentiment of "Sanitary Control Work," which he reviewed briefly and in an interesting manner, avoiding details sufficient to save the effort from being tedious to the ladies, but at the same time he threw the limelight on the burning questions of the day.

Dr. Wright, of the Board of Health, responded to "Our Sister Profession," and showed the advances made in recent years in the domain of human medicine.

Dr. A. H. Baker, of Chicago, spoke to the toast to "The Schools," and accomplished his task in an acceptable manner. He refused to accept the suggestion of Prof. Brewer that the family horse should be fatted for the dinner table, and thought it would be a sad feast for those who loved their pets. He recognized the essential patronage of the schools and asked the pertinent question as to where the profession would be if there were no schools; and

Dr. Roscoe R. Bell, in responding to the toast to "The Ladies," continued the query by asking where the veterinarian would be if it was'nt for the ladies? He disclaimed any intention of offering a peroration to the subject of his toast, but preferred to talk about our own ladies and their influence upon the character and growth of the Association, contending that their presence had not only rendered the meetings more enjoyable, but had largely increased the attendance upon them. He also gave a brief history of their attendance upon our meetings, beginning with the Buffalo meeting in 1896, until the present year, pointing to the red-letter meeting at Minneapolis, when the ladies first graced the banquet table.

Dr. E. C. Ross, Chairman of the Local Committee of Entertainment, gracefully but modestly responded to the toast to his Committee, and then one of the best of such occasions was brought to a pleasant close at about 1 o'clock.

* * *

NOTES OF THE A. V. M. A. MEETING.

"The best way to get a spavin off is to swap it off."—(*Dr. Hanshew, Brooklyn, N. Y.*)

There were 192 guests at the banquet on Thursday night, easily the record in the history of the annual dinner.

The extremes met at New Haven when Monsarrat registered from Hawaii and McCuaig from New Brunswick.

Dr. W. T. Monsarrat and family, of Honolulu, H. T., were the guests of Dr. Roscoe R. Bell, at his home in Brooklyn, for a couple of days while on his way to New Haven.

President Lowe covered himself with honor by the splendid address he delivered at the opening of the convention. It was loaded with pertinent suggestions for the benefit of the Association.

Many of the most noted surgeons of the country operated at the clinic—Williams, Merillat, Harger, Gill, Berns, and others; while Geo. R. White proved a cyclone in the casting and securing of subjects.

A New York City veterinarian came up to the clinic and appeared to be much interested in what was transpiring. He was a stranger to all, until some one guessed that it was Charles E. Clayton minus his golden whiskers.

Interviews with veterinarians from all sections of the United States disclosed the flourishing condition of veterinary practice, almost every one declaring that they were driven to their utmost capacity continuously.

The boat ride on Long Island Sound was greatly enjoyed, particularly by those from the inland. The weather was splendid for such an event, the music excellent, and the spirit of levity ran high. Dancing was indulged in, and all were happy.

The South was well represented at New Haven—Dalrymple and White, Louisiana; Hill, Florida; Ranck, Mississippi; Friedheim, South Carolina; Butler, North Carolina; White, Tennessee; Piatt, Kentucky; Clark, Virginia; Dougherty, Mackie and Jarman, Maryland.

Dr. W. L. Williams made some notable converts to his method of diagnosing roaring while the animal is at rest. He seldom fails by the digital exploration of the laryngeal apparatus, detecting the atrophied muscles of the left side, with a soft non-resistant condition of the cricoid cartilage.

A substance called "sulphur starch" was used in the clinic for removing hair from the field of operation. It resembled paste, was applied thickly, and after five minutes was washed off, taking with it every vestige of hair, without injury to the skin. Many spectators rubbed it on their wrists with similar results.

There were never so many invitations to secure the next meeting of the Association. Next year's convention is sought by Kansas City, Denver, Honolulu, Atlantic City, Seattle, Jamestown, Saginaw, Chautauqua, and Niagara Falls. The sentiment seemed to rest with Kansas City and Denver, with the former a 2 to 1 favorite.

Late in the afternoon of Friday an unrecognized veterinarian of New Haven tried to gain entrance into the tent where the clinic was being held, but was repulsed. His lawyer failed to convince the Chief of Police that he could legally enter, and he took revenge by instituting suit against Dr. Bland for $10,000 for injury to his reputation.

Dr. Wm. H. Wray, B. A. I., London, England, sent over some currency by Dr. Dougherty, with instructions to gather together as many of his old friends as possible and drink to the sentiment of "Auld Lang Syne." If one might judge by the frequency with which the health of "Wray" was toasted, the Bank of England note he sent must have been of generous proportions.

Many of the Western veterinarians with their families went on to New York or other Eastern cities on sight-seeing or shopping expeditions. At Coney Island on Monday evening we met Drs. Jenson and McKim and families, of Nebraska, while Dr. W. L. Williams, wife and son, of Ithaca, were shooting the chutes in Luna Park. Although we heard that Dr. Reynolds, of Minnesota, was also there, we did not come in contact with him.

Mr. Charles F. Roberts, who has done the stenographic reporting for the convention the past two years, is a past master at the work. His familiarity with medical phraseology and acquaintance with the speakers is of great assistance in expediting the work and omitting errors. As his fees are no larger than other first-class reporters, the incoming publication committee would do well to give preference to his bid for the 1907 meeting.

It was generally observed that horses anæsthetized with chloroform at the clinic recovered in remarkably short time. One animal was up and eating in ten minutes from the time the inhalations of the drug had ceased, while all were on their feet in less than the usual time. This we heard accounted for by the free access to pure air afforded by the open tent, as against a stuffy operating room, where such patients often lie on the table or floor for an hour before attempting to get up.

There were present at New Haven the largest attendance in the history of the Association. The following table will be interesting for the purpose of comparison:

Place and Year.	Members.	Visiting Veterinarians.	Lady Visitors.	Other Visitors	Total.
Ottawa, Canada, 1903.	103	50	62	86	301
St. Louis, Mo., 1904 .	175	66	58	16	315
Cleveland, Ohio, 1905.	130	111	70	22	333
New Haven, Conn, 1906	144	84	88	58	374

Dr. Monsarrat came to the convention with the idea of stampeding it for Hawaii in 1907. He was loaded with beautiful silk flags, upon which was printed in large letters "Hawaii 1907," and he brought letters from all the prominent commercial associations of Honolulu, guaranteeing easy rates and a good time. There is no question but that under the generous patronage of our own Monsarrat, the pilgrimage to the Paradise of the Pacific would be the realization of life's dream, but when we come back to the sober democracy of "the greatest good for the largest number," the intoxicating thought must be displaced for the realism of duty.

The Association of Veterinary Faculties and Examining Boards held two meetings—the first on Monday evening, lasting until near midnight; the second during the sail on the Sound Thursday. A better understanding was had between the three elements composing the Association — schools, examining boards, and A. V. M. A.—and those present felt much encouraged over the prospects of accomplishing some good. All the schools represented agreed to submit their matriculates' examination papers at next year's meeting. Dr. Hoskins was reëlected President, Dr. Bell Vice-President.

New York had the largest number of veterinarians present of all the states—28 members, 12 visiting veterinarians (40); Connecticut, 14 and 25 (39); Massachusetts, 18 and 14 (32); Pennsylvania, 15 and 8 (23); New Jersey, 12 and 3 (15); Illinois, 7 and 1 (8); Ohio, 5 and 2 (7); Canada, 5 members; Nebraska, 4 and 3 (7); Missouri, 3 and 2 (5); Minnesota, 4 members; Indiana, 3 members; New Hampshire, 1 and 4 (5); District of Columbia, 2 and 1 (3); Maryland, 3 members; Michigan, 2 and 1 (3); Iowa, 2 members; Louisiana, 2 members; Vermont, 1 and 2 (3); Rhode Island, 1 and 2 (3); all others, 1 each.

ILLINOIS VETERINARY MEDICAL ASSOCIATION

The 24th semi-annual meeting of this Association was called to order at 9 o'clock, A. M., in Exchange Hall, Illinois Hotel, Bloomington, July 12th, by President W. H. Welch, D. V. S.

Minutes of preceding meeting were read and approved.

The following visitors and members were present: Drs. W. H. Welch, Lexington; N. I. Stringer, Paxton; F. H. Barr, Pana; H. J. Mau, Herscher; O. A. Kyle, Bloomington; George B. Jones, Sidell; W. J. Martin, Kankakee; J. T. Nattress, Delavan; D. L. De Vore, Le Roy; C. G. Glendinning, Clinton; A. G. Alverson, Bloomington; L. C. Tiffany, Springfield; Albert Babb, Springfield; F. A. Laird, Auburn; W. E. Giller, Roodhouse; R. E. Nesbitt, Lincoln; D. E. Kinsella, Chillicothe; N. W. Kyle, Colfax; T. E. Giller, White Hall; L. R. Dillon, Fremont; C. R. Andrew, Atlanta; M. Fletcher, Bethany; B. F. Hudson, Mowequa; C. C. Mills, Decatur; I. Stallman, Pontiac; F. H. Wessell, Pontiac; Fred H. Burt, Chenoa; C. F. Behner, Marshall; Carl H. Yoder, Watseca; W. H. Withers, Magnolia; W. C. Bates, Ellsworth; C. H. Mamhart, Bloomington; E. A. Jenkins, Shelbyville; G. Z. Barnes, Pekin; M. Story, Bradford; H. H. Preslet, Fairbury.—(36).

The following applications for membership were read, and, upon the ballot being spread, were declared elected: Drs. O. A. Kyle, Bloomington; W. E. Bates, Ellsworth; F. H. Wessel, Pontiac; R. E. Nesbitt, Lincoln; W. H. Withers, Magnolia; Carl H. Yoder, Watseca; Marion Fletcher, Bethany; Henry Jacob Mau, Herscher; L. Roy Dillon, Fremont; C. H. Behmer, Marshall; D. L. DeVore, Le Roy; R. F. Harris, Hillsborough; E. A. Jenkins, Shelbyville; Bently F. Hudson, Mowequa; D. L. Travis, Vandalia; C. R. Andrew, Atlanta, and M. W. Shempf, Taylorville.—(17).

Dr. N. I. Stringer, of Paxton, read a paper on "Hypodermic and Intravenous Medication,"* which was most thoroughly discussed by Drs. W. J. Martin, C. C. Mills, A. G. Alverson, Albert Babb, R. E. Nesbitt, F. H. Barr, J. T. Nattress, C. G. Glendinning and George B. Jones.

Dr. Albert Babb, of Springfield, reported a case of "Plenalvia in a Holstein Cow."† Discussed by Drs. George B. Jones, C. C. Mills, J. T. Nattress, W. J. Martin and N. I. Stringer.

* Wll be found in "Original Articles" department, this month.

† Will be found in "Reports of Cases" department, this month.

At 12 o'clock noon, upon motion, meeting adjourned for lunch, to reconvene at 1.30 P. M. At 1.30 meeting was called to order and reading of papers resumed. Dr. C. G. Glendinning, of Clinton, presenting one entitled "Thermic Fever." Discussed by Drs. L. C. Tiffany, C. C. Mills, W. J. Martin and Albert Babb.

Dr. Fred H. Burt, of Chenoa, read a paper on "Parturient Eclampsia." Discussed by Drs. C. C. Mills, W. J. Martin, W. I. Stringer, Albert Babb, H. H. Presler, George B. Jones and L. C. Tiffany.

Dr. C. C. Mills, Decatur, "Some Successes and Some Failures." Discussed by Drs. W. J. Martin, N. I. Stringer, Albert Babb and L. C. Tiffany.

Dr. W. J. Martin, Kankakee, "Reports of Cases." Discussed by Drs. N. I. Stringer, C. C. Mills, G. Z. Barnes, Albert Babb, R. E. Nesbitt and J. T. Nattress.

Under "Unfinished Business" came the second reading and vote on an amendment to By-Laws offered at the last annual meeting to change Section 1 of Article 2 to read "July" instead of "February." Upon vote being taken was declared unanimously carried.

The following members were appointed by the President to draft resolutions of condolence on the death of Dr. W. H. Curtis, of Meringo, who died at his home after a very brief illness, and while the last annual meeting of this Association was in session: Drs. W. J. Martin, F. H. Barr and Albert Babb.

The following resolutions were unanimously adopted and ordered sent to the family of the deceased, and to be engrossed in the minutes:

"WHEREAS, It has pleased the great Creator of Heaven and Earth to remove from our midst our late friend and professional brother, Dr. W. H. Curtis; be it

"*Resolved*, by the Illinois Veterinary Medical Association in semi-annual convention assembled, that we sincerely condole with the family of our late lamented brother in this their hour of trial and affliction, and devoutly commend them to the keeping of Him who looks with pitying eye upon the widowed and fatherless.

"*Resolved*, That in our natural sorrow for the loss of a faithful and honored friend we find consolation in the belief that it it is well with him for whom we mourn.

"*Resolved*, That while we deeply sympathize with those who are bound to our departed brother by the nearest and dearest ties,

we share with them the hope of a reunion in the better world where there are no partings, and bliss ineffable forbids a tear.

"*Resolved*, That these resolutions be spread upon the minutes of this Association, and a copy be transmitted to the family of of the deceased. Signed,

"W. J. Martin
"F. H. Barr } *Committee.*"
"Albert Babb.

The following bills were read and ordered paid: Seals, 75c.; programs, $5; stamps, $6; Secretary's fee, $10; 12,000 letterheads, $7; 2000 envelopes, $5.75. Total, $34.50.

On motion a vote of thanks was extended to the management of the Illinois Hotel for the use of hall and the kind and courteous treatment extended to the visiting veterinarians.

Nothing more coming before the Association, upon motion, adjourned to meet in annual session in Chicago in December at the call of the President.

Universal good feeling prevailed and all returned home feeling that the 24th semi-annual meeting had been a successful and profitable one. F. H. BARR, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The semi-annual meeting of this Association was held at the Marlborough Hotel, Asbury Park, July 12th and 13th, 1906, with President T. Earle Budd in the chair.

Many of the members took their families with them. Those present included Dr. and Mrs. T. Earle Budd, Orange; Dr. R. T. Churchill, Secaucus; Dr. and Mrs. J. H. Conover, Flemington; Dr. Robert Dickson, Seabright; Dr. William Gall, Mateawan; Dr. James T. Glennon and mother, Newark; Dr. and Mrs. George F. Harker, Trenton; Dr. V. B. Height, Asbury Park; Dr. and Mrs. L. P. Hurley, Hopewell; Dr. and Mrs. John B. Hopper, Ridgewood; Dr. James McDonough and daughters, Montclair; Dr. E. L. Loblein and family, New Brunswick; Dr. Seth Lockwood, Woodbridge; Dr. J. Payne Lowe and daughter, Passaic; Dr. and Mrs. William Herbert Lowe, Paterson; Dr. Carroll T Rogers, Woodbury; Dr. T. B. Rogers, Woodbury; Dr. T. E. Smith, Jersey City; Dr. Henry Vander Roest, Newark; Dr. Andrew G. Vogt, Newark; Mr. J. H. Phelan, Norwich Pharmacal Co., Norwich, N. Y.; Dr. Roscoe R. Bell and son, Brooklyn, N. Y.; Dr. S. G. Hendren,

Arlington, N. J.; Dr. A. A. Moody, Mount Holley, N. J.; Dr. Geo. H. Berns, wife and daughter, Brooklyn, N. Y.; Dr. and Mrs. Robert W. Ellis and friend, New York City; Dr. Chas. S. Thompson, Rahway, N. J.; Dr. and Mrs. Chas. B. Helm, Camden, N. J.; Dr. Chas. J. Grauch, Mantura, N. J.

The minutes of the twenty-second annual meeting held at Trenton, Jan. 11, 1906, were read and approved.

In opening the meeting, the President reminded those present that this was the semi-annual meeting and that they had assembled at Asbury Park for recreation as well as for the transaction of business and the reading and discussion of papers. He was glad that so many members had brought their families with them and extended a cordial welcome to guests from neighboring states.

Dr. S. G. Hendren, Arlington, N. J., and Dr. A. A. Moody, Mount Holley, N. J., were proposed for membership. Both names were referred to the Executive Committee, who duly approved of the credentials of both applicants and they were regularly elected to membership.

Dr. T. E. Smith's amendment, introduced at the January meeting, changing the Constitution so that hereafter all officers shall be elected for one instead of two years, was reported favorably by the Executive Committee and finally passed by a unanimous vote.

The following resolutions were offered by Dr. T. B. Rogers and adopted by the Association:

"*Resolved*, That this Association views with deep regret the failure of the military authorities of the State and the United States to properly recognize the veterinarian by giving him the rank he holds in European armies, and, with the view of bettering the condition of affairs, be it further

"*Resolved*, That we individually and collectively pledge ourselves to urge by all means in our power, even to the extent of withdrawal of professional recognition, that no member of our society accept the office of army veterinarian until the rank is commissioned."

Dr. T. B. Rogers stated that he had been appointed a committee from the State Board of Veterinary Medical Examiners to confer with the Association to devise means to put a stop to illegal practice in the State. The Association pledged the State Board its support so far as may lie in its power, and, upon motion of Dr. T. E. Smith, $100.00 was appropriated to the State Board towards the expense of prosecution of illegal practitioners.

Dr. William Herbert Lowe, President of the State Board, was to have spoken on the law regulating veterinary practice in the state and the prosecution of illegal practitioners, but was prevented from doing so by being summoned by the State Board of Health to investigate a serious outbreak of glanders in Middlesex County.

Dr. T. E. Smith acted as Secretary *pro tem* during the absence of Dr. Lowe from the meeting.

Dr. James McDonough delivered before the Association a lenghty discourse on pathological horse shoeing, making a number of demonstrations and exhibiting specimens illustrative of his lecture. A profitable discussion followed Dr. McDonough's lecture, in which a number of experienced veterinary practitioners, including Dr. Geo. H. Berns, of Brooklyn, N. Y., took part.

Dr. Carroll T. Rogers presented on excellent paper on parturient paresis.

A vote of thanks was given to Drs. McDonough and Carroll T. Rogers.

An interesting discussion took place on the subject of osteoporosis, opened by Dr. Roscoe R. Bell, Brooklyn, N. Y.

A portion of the second day was given up to a clinic held at Dr. V. B. Height's Veterinary Hospital, Asbury Park.

The Association voted to hold the next annual convention, January 10, 1907, at Jersey City.

WM. HERBERT LOWE, *Secretary.*

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

The ninth semi-annual meeting was held in Rochester, N. Y., Thursday, July 12th, 1906, with nearly every member present, as well as the following visitors: Dr. W. L. Baker, Buffalo; Dr. Joseph Sutterby, Le Roy; Dr. W. L. Mills, Perry; Dr. A. E. Merry, Syracuse; Dr. F. E. Cleaver, Avon; Prof. W. L. Williams, Ithaca, and others whose names the Secretary failed to get.

Meeting was called to order by the President, Dr. H. S. Beebe, Albion, at Webber Brothers' Veterinary Hospital at 9.30 A. M., and work immediately began on the clinics.

Case 1.—Punctured wound of hip; had been operated on previous to the meeting. Operation described and treatment given.

Case 2.—Broken knee. Wound had been sutured and a counter incision made for drainage. Sutures had given way, leaving a gaping wound, which was being dressed with creolin solution and dusted with boric acid and alum.

Case 3.—Quittor. Had been operated on three weeks previous to meeting. Quarter was removed, necrosed tissue curetted out, wound cleaned with bichloride solution and afterwards dressed with boric acid.

Case 4.—Laminitis, with brain symptoms. Treatment, cathartics, bromide of potash, poultice and the soak tub.

Case 5.—Punctured wound of foot. Piece of wood removed from right heel, seton passed along course of puncture, coming out at plantar surface. Cleansed with antiseptics.

Case 6.—Bay gelding suffering from strangles, parotid gland much swollen. Blister applied to glands and the usual treatment prescribed.

Case 7.—Acute indigestion. Treatment: stomach tube, trocar, chloral and hyposulphite of soda.

Case 8.—Toe-crack.

Case 9.—Punctured wound, end of shaft entering near point of elbow, passing forward nearly to point of shoulder. Washed with antiseptics and packed with gauze.

Case 10.—Injury to shoulder. Antiseptics and hot fomentation prescribed.

Case 11.—Injury to hock. Blister prescribed.

Case 12.—Tumor at point of elbow about four inches in diameter. Operated on by Drs. Webber. Patient placed on operating table, parts cleansed with creolin solution. Ecraseur chain passed around tumor at its base, including the skin, and the whole mass removed. Washed with creolin solution and dusted with boric acid, to be followed by a dressing of lime and charcoal.

Case 13.—Subject found by Humane Society agent, wandering in highway; apparently suffering great pain, continually raising one posterior leg, alternating from right to left, then from left to right; cannot walk in a straight line. A diagnosis of spinal disease was made and the animal destroyed.

Case 14.—Impaction of colon. Aloes, to be followed with oil, was prescribed.

Case 15.—Stringhalt. Operated on by Dr. H. S. Beebe, assisted by Dr. J. E. Clansey. Patient secured on table, parts cleansed and shaven; cocaine injected over seat of operation; an incision made just back of the lateral extensor pedis tendon;

the knife passed under the tendon, and pressure brought to bear on the tendon over the knife with the thumb of the left hand until the tendon gives way, leaving a space between the cut ends which can be plainly felt. Wound washed with lysol solution and bandaged. Two weeks' rest prescribed.

Case 16.—Passing stomach tube by Dr. Taylor.

Case 17.—Collie bitch. Spayed by Dr. Switzer. Patient given 1½ grains of morphine hypodermically. Operation performed through median line.

Case 18.—Mongrel bitch. Spayed by Dr. F. D. Holford, without medication. Incision made in flank and ovaries removed by tortion.

Case 19.—Quittor. Operated on by Prof. W. L. Williams. Patient secured on table, cocaine injected over plantar nerves; the hoof rasped thin over entire quarter; parts shaved and washed with bichloride solution and an elastic bandage applied. An opening was found at the coronet over the external lateral cartilage; this was probed and found to extend downwards to sole; a free opening was made, exposing the end of the probe, to which a piece of tape was fastened and drawn up through the sinus; to this a piece of gauze saturated with tincture of iodine was fastened and drawn down through the sinus. An incision was then made through the coronary band at the front of the foot and at the end of the tumefaction, where a secondary abscess was found; this was packed with cotton soaked in tincture of iodine.

Case 20.—Spavin. Fired by Dr. Carr Webber with no restraint on animal except a twitch. 60 minims of a 5 per cent. solution of cocaine were injected underneath the skin about five minutes before firing.

Case 21.—Was a demonstration by Prof. Williams of his operation for roaring.

The meeting then adjourned to the rooms of the Rochester Club, where it was called to order at 5.30 o'clock.

The application of Doctors Joseph Sutterby, of Le Roy, and William H. Mahonay were received and referred to the Board of censors.

Meeting then opened for the discussion of the various cases and continued until it adjourned for the banquet at 6.30. The banquet was thoroughly enjoyed and will be remembered by all.

At the close of the banquet, Prof. Williams, President of the State Veterinary Medical Society, was requested to speak

in the interest of the meeting at Buffalo. Prof. Williams called attention to the fact that this was the greatest association in the United States, it having the power of appointing the examining board, which has the say of who shall and who shall not practice. It is the duty of every practitioner to support the various associations, as they represent the profession, and give us our standing in society. Our State Society has given its members greater opportunities than any other organization in this country. Dr. Williams urged those who had left the State Society to return, and those who had not been members to make application at once.

During the past few years the meetings had been held either in Ithaca or Brooklyn, no one seeming to dare to invite the Society outside of these cities until this year, when Buffalo, through Dr. W. L. Baker, extended a very cordial invitation. Dr. Williams requested all present to do all in their power to assist Dr. Baker in making the meeting a success.

Dr. Baker then spoke, wishing to say that this was not his meeting, but our meeting, and assuring us that it would be a practical meeting for practical men.

Dr. Tegg assured Dr. Baker that our association would do all in its power to assist in making this meeting a success. He asked for volunteers to read papers at Buffalo. Dr. Switzer, of Oswego, Dr. Roy Webber and Dr. H. Geo. Tegg, of Rochester, and Dr. H. S. Beebe, of Albion, offered to read papers or report cases at Buffalo.

The discussion of the cases and operations of the day was again taken up and continued until a late hour. All who remained felt more than repaid, as many interesting points were brought out in the discussion. J. H. TAYLOR, *Secretary.*

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

BUFFALO, SEPT. 11, 12, AND 13.

The seventeenth annual meeting will occur at the Genesee Hotel, Buffalo, beginning Tuesday morning, Sept. 11, and it is confidently predicted that it will be one of the very best in the history of the organization. A literary program of much promise has been arranged, and several subjects of grave interest to the profession are to be thoroughly discussed by some of the ablest men in the state. The subjects of the papers with the names of the essayists were published in the August number,

and the Secretary informs us that there have been no changes in the data there given.

The clinic is under the direction of Dr. W. L. Baker, of Buffalo, and will be held in the James T. Twitty Riding Academy, 26 East North Street, and is arranged in the form of an amphitheatre, so that all can see the operations.

What is expected to be one of the most pleasant features of the meeting will be a trip to the Maplewood Hackney Stock Farm, where the veterinarians will be entertained by a horse show, made possible through the courtesy of the manager, Mr. E. T. Gay. It has been arranged to take this trip on Wednesday afternoon, 12th, leaving Buffalo on the Erie Railroad at 2.30, arriving at Attica at 3.45, leaving there at 7.14, reaching Buffalo at 8 o'clock, in time for an evening session.

Trips to the various places of interest will be arranged at Buffalo, and all may be assured of a very pleasant and profitable time.

Headquarters will be at the Genesee Hotel, and the sessions will be in one of their banquet halls.

MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

This Association will hold its fall meeting at Detroit, Sept. 3 and 4 (State Fair week). The main features will be a clinic and social pleasures. A literary program has been provided for the evening of the 4th. Secretary Black extends a cordial invitation to veterinarians and their families.

DR. M. R. THYNGE, Charlotte, Mich., was seriously kicked by a horse not long since, but has about recovered.

"ACTINOMYCOSIS OR LUMPY JAW," by D. E. Salmon, D.V.M., and Theobald Smith, M.D., which has been reissued by the Bureau of Animal Industry to supercede Circular No. 7 on the same subject.

"THE WESTERN VETERINARIAN" has, phœnix like, arisen from its ashes, and made its welcome appearance after missing but one issue on account of its baptism of fire. The undaunted spirit displayed by our brethren of San Francisco is worthy of all praise, and we hope some day to see the *Western Veterinarian* as large as the REVIEW, for it aims high for progress, and we need such journals in the struggle to elevate veterinary medicine and so purify the ranks of our profession.

NEWS AND ITEMS.

DR. WM. VEIT, V. M. D., West Chester, Pa., has entered the service of the Bureau of Animal Industry and has been assigned to duty at the Union Stock Yards, Chicago.

IT was stated at the New Haven meeting of the A.V. M. A., that in consequence of the great disaster which had befallen the Golden Gate, the San Francisco Veterinary College had terminated its existence.

DOCTOR LIAUTARD writes that he has had lately the great pleasure and pleasant surprise of receiving a postal card from Helena, Montana, with the greetings and regards of Doctors Knowles and Pearson. Dr. L. returns his thanks and his regards.

DR. B. T. WOODWARD, Recording Secretary of the Pennsylvania State Veterinary Medical Association, Oxford, Pa., has entered the service of the Bureau of Animal Industry, and has been assigned to duty on the meat inspection force at Chicago, Ill.

DR. R. W. A. ENGLISH, of Jersey City, N. J., had the misfortune to be in a runaway accident last month, and suffered a severe compound fracture of the leg, and at the time of our information there was grave danger of the necessity of amputation of the extremity.

SPECIMEN VETERINARY "NEWS" ITEM FROM THE DAILY PRESS.—*Waterbury, Conn., Aug. 18.*—Love for his horse has caused James Stone, of Thomaston, to spend hundreds of dollars to save the life of "Tom," a big truck horse, suffering from a throat affliction. "Tom" is the only horse in the world to undergo the delicate operation of tracheotomy and now he is breathing through a silver tube eight inches long. He will undergo a second operation in New Haven this week, when professors from the Yale medical school will assist the veterinarians.—*(N. Y. American, Aug. 18.)*

DR. V. A. MOORE is still in Anaconda, Montana, investigating the smelter smoke cases which are the subject af a large law suit brought by the stockmen against the mine-owners, claiming that innumerable deaths of live stock are due to the smoke. The mine authorities are combatting the contention with the statement that the cause of death is probably a contagious disease. In consequence, they have locked horns for a fight to the death, and each side has been monopolizing some of the best veterinary talent in the country for some months.

While we do not know how many there are actually engaged in the special scientific investigation, we know that Dr. D. McEachran, Dr. D. E. Salmon, Dr. Leonard Pearson, Dr. V. A. Moore, Dr. M. E. Knowles and a number of local men have been on the job. When a legal decision is reached the REVIEW will endeavor to get the scientific story of the battle for its readers.

"CALF SCOURS: A NEW TREATMENT," by Louis A. Klein, V. M. D., Professor of Veterinary Science, Clemson Agricultural College, South Carolina, being Bulletin 122, of the Agricultural Experiment Station, was received some little time ago, and we have been hoping to publish it in full, but on account of the pressure on our pages have not found it possible. We append here the summary of the bulletin: "Twelve milk-fed calves affected with 'scours' were treated by adding formalin to the milk in the proportion of one part of the drug to 4,000 parts of milk. Eleven recovered without any additional treatment—seven on the second day after the use of the formalin was begun, three on the third day and one on the ninth. The other calf (No. 11) required additional treatment, but finally recovered. Three cases of 'scours' in calves being fed on grain and running at pasture were treated with formalin, but the drug did not prove effective in this variety of the disease."

"EXPERIMENTS WITH MILK ARTIFICIALLY INFECTED WITH TUBERCLE BACILLI" is the title of Bulletin No. 86 of the Bureau of Animal Industry, and is the work of E. C. Schroeder, M. D. V., Superintendent of Experiment Station, and W. E. Cotton, Expert Assistant in Experiment Station. In this 19 page bulletin the authors have reached some important conclusions: (1) That the high susceptibility of guinea-pigs to tuberculosis holds good only when the infectious material is introduced into the body in a way in which it can not escape through the natural excretory organs. (2) That the localization of tuberculous disease in the lung of an animal gives us no information as to the point at which the infectious material entered. (3) That it is not necessary to account for the great frequency with which tuberculosis localizes itself in the lung by supposing that the most common form of exposure to tuberculosis is through the respiration. (4) That the experiments, taken as a whole, direct special attention to the danger sustained through exposure to tuberculous material that enters the body with the food. This fact can not be too strongly emphasized.

AMERICAN VETERINARY REVIEW.

OCTOBER, 1906.

Correspondents will please note the change in address of Dr. Roscoe R. Bell, from Seventh Avenue and Union Street, to 710 East Second Street, Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, Aug. 15, 1906.

BOVINES CAN BE INOCULATED WITH GLANDERS—For a long time bovines have been regarded as refractory to glanders, either by contagion or any experimental transmission. An extract from the *Archiva Veterinaria*, which I find in the *Journal of Comparative Pathology and Therapeutics*, seems to indicate that this belief must be abandoned. Notwithstanding the numerous experiments recorded by Renault, Bouley, Gerlach, Hertwig, Cadeac, Marcone, Nocard, etc., etc., Rigler and Ciacu have made experiments which leave no doubts on the question. In a first attempt, where a calf had been injected with glanders bacilli and which had had a temporary fever, the result was an abscess, which contained virulent pus. The abscess healed without leaving any traces. The calf showed no lesions at the post-mortem. Other attempts were made by injections into the peritoneal cavity, into the veins and the substance of the testicle, but without giving rise to any peculiar manifestations, except temporary fever, dyspnœa, and arthritis, which disappeared in due time. At the post-mortem no lesions were found.

With the hope of finding an anti-glanderous serum, these

experimenters were led to inoculate bovines. In 1899, and later, in 1901, a cow was inoculated subcutaneously with morvine in increasing doses, and she received altogether about 625 cub. centim. of Nocard's strong mallein. The serum of that cow had no specific action on glanders bacilli *in vitro*, and when injected into guinea-pigs simultaneously with glanders it proved ineffective. They then injected a certain quantity of four cultures into the veins. After a few days more, and later on more. After fifteen days, blood was extracted and the serum tested on guinea-pigs. It seemed to have a slight preventive and curative effect. To increase this action, sixteen agar cultures of glanders bacilli were injected into the same cow, but she died a few hours after, showing only diffusible congestion and fatty liver at post-mortem.

* * *

This result was not very conclusive. In 1904 new experiments were started. A second cow received intravenously dead glanderous bacilli very virulent, which was used for the preparation of mallein. Intense fever followed and the temperature rose above 40° C. This condition lasted for several days. Finally the animal dropped down and could not be made to get up again; she then had dyspnœa; bed sores made their appearance and a little sero-purulent discharge from the nostrils could be detected, from which cultures of bacilli were obtained. Besides these manifestations two round ulcers were also observed on the septum nasi, which was covered with mucus and crusts. The cow died some days after, and at the post-mortem examination typical glanderous lesions were found. The nasal mucous membrane, the septum nasi and the turbinated bones showed glanderous ulcers and nodules; the pulmonary veins exhibited thrombi, the submaxillary and bronchial lymphatic glands contained glanderous centres, while the subcutaneous tissue revealed glanderous nodules. Cultures were made from the blood, from the internal organs, lymphatic glands and other lesions, and mice and rabbits were inoculated to test the virulency of the bacilli and the cultures grew very

handsomely. The results of these were positive.

From this it is shown that bovines can be experimentally inoculated with glanders.

* * *

AS TO THE INTESTINAL ORIGIN OF PULMONARY TUBERCULOSIS.—The subject of tuberculosis is still occupying the attention of investigators and many are the records of experiments that are to be found in scientific papers.

Among them is one from Professors Calmette and Guerin on the intestinal origin of pulmonary tuberculosis. After recalling the words of Behring, "Pulmonary tuberculosis of adults is almost always the result of an intestinal infection which occurred in youth and has developed later on," they studied the question in young and adult animals by feeding young goats and adult she goats with milk containing bacilli of various origins, such as bovine, human, aviary, etc. The result was that, whatever had been the age of the animals, pulmonary tuberculosis, *not inoculated*, is always derived from a primitive intestinal infection; but, while in *adults* the bacilli would leave no mark of their passage through the lymphatic system of the intestine, in the *young*, on the contrary, pulmonary tuberculosis occurs only when the mesenteric glands, which in them were extensively diseased at post-mortem, cannot retain the tuberculous bacilli and prevent them from being carried away in the lymphatic circulation. As a practical conclusion, they say, that it is indispensable to teach the tuberculous individual to expectorate and not to swallow his sputa from the moment these contain becilli. In natural conditions, dusts are infecting, not because they are inhaled, but because they are swallowed.

* * *

Following on the same subject and continuing his researches on the pathogeny of tuberculosis, Prof. Vallée carried out other experiments, placing himself in the conditions of natural infection. Eleven calves, free from disease, aged from 8 to 25 days, received during three months the raw milk of

four Norman cows, three of which reacted to tuberculin without showing any clinical sign of tuberculosis. These cows being killed at the end of the experiment, two presented softened massive alterations of the tracheo-bronchial and mediastinal lymphatic glands; in the third there were also small lesions in the udder. At the age of three months, all the calves reacted to tuberculin; they were weaned, kept four weeks more and killed. At the autopsy, *nine of them presented exclusively well marked lesions of tuberculosis* in the bronchial and mediastinal glands. But not one had the smallest alteration of any of the mesenteric glands; these contained, however, few bacilli, as shown by inoculation of guinea-pigs. The two other calves had besides a single pulmonary lesion, in appearance of more recent formation than those of the glands. These results differ some from those I have spoken of above, and Prof. Vallée explains them as being due to the difference in the quantity of bacilli used by Profs. Calmette and Guerin. The conclusions are: In the young, as in the adults, pure pulmonary tuberculosis can result from an intestinal infection, and it can no longer be considered as primitive and due to the inhalation of virulent dusts. "No one can pretend that these conditions can be different in the young herbivora and the young child." Thus we can explain the frequency of the tracheo-bronchial adenopathy of tuberculosis, observed in children of all ages, which die incidentally, and therefore the hypothesis of Behring can be modified, by saying, "that many cases of pulmonary tuberculosis of adults proceed from the awakening of tuberculous lesions of the bronchial glands consecutive to an infection by the digestive tract in youth, not manifested externally by mesenteric adenopathies."

* * *

Finally these differences of opinion from such high authorities on the subject were settled by another communication from the first writers, which was made at the Academie des Sciences, in which it is stated that they have made further experiments and these confirm in all points the results obtained by Prof. Vallée, they using in their last experiments smaller doses of bacilli, as

he had suggested. Here are their final conclusions: (1) Experimentally in animals, and clinically in children, whenever the tuberculous infection is manifested by tracheo-bronchial lesions of adenopathy, there are tuberculous bacilli in the mesenteric glands, even when these seem to be healthy. (2) Mesenteric glandular infection preceding the apparition of the tracheo-bronchial adenopathic lesions must be considered, as well as the pulmonary tuberculosis of children and adults also, as resulting from a tuberculous infection of intestinal origin.

Actually, direct contamination by the respiratory canal not being proved by irreproachable experiment, it seems more and more evident that children as well as adults contract tuberculosis in absorbing either milk from diseased animals or taking in dusts or food soiled with bacilli or with tuberculous sputa of human origin.

* * *

STERILIZED TUBERCULOUS MEAT NON-TOXIC.—Will the consumption of tuberculous meats, products or organs, previously sterilized, be followed by intoxication? This is a question that Professor Galtier, of Lyon, has solved by experimentation.

Recently Calmette and Breton, experimenting on guinea-pigs, found that repeated ingestions of tuberculous bacilli, sterilized by heat at 100°, can be dangerous for subjects affected with tuberculosis and might not be innocuous for healthy individuals. They concluded by advising the necessity of excluding for the alimentation of man the milk of tuberculous cows.

In relation to the meat of tuberculous animals, there is no need to have any fear, if properly cooked. Cooking destroys all virulency, and the toxine that may exist is in such small quantity that it would have no effect. Muscular structure is very seldom invaded with tuberculous lesions, and no dangerous toxicity seems to be inherent to it, if one judges from existing facts. Before the organization of the inspection of meat, almost all the products of animals were used as food, and yet no case of *intoxication* in those that used them has been re-

corded, providing these products were well cooked. Everywhere organs are taken away from the general consumption because of their being tuberculous: they are destroyed, burnt or transformed into manure or other uses. And yet it is frequent for some of them to be sterilized, cooked, and then given to animals for food, and no intoxication seems to have resulted from this; it may even be supposed that the same has happened with human beings, and it must be acknowledged that even in such case no *intoxication* is to be feared.

Professor Galtier has carried out experiments on young pigs and on dogs of various ages and breeds, and in all of them after feeding with *sterilized* tuberculous products of all kinds he has failed to observe any mark or symptom of intoxication whatsoever; he therefore concludes that *the meat of tuberculous animals is not toxic:* that the accidental use of it is not dangerous, so long as it has been sterilized, and that even repeated meals of such nature will not give rise to any indisposition; consequently no accident will be observed, even if some lesions had existed.

This is very well to the scientific point of view; but, then, has there not been too much said and written about the dangers of such consumption?

* * *

Vaccination Against Canine Distemper.—At the closing of the session of the Société Centrale for the year 1906, the prize committee announced that the most honorific reward had been given to M. Carré for his investigations on dog distemper. The prize is a gold medal of quite great value and known as the "Mathieu Prize." This was well deserved. I have already made allusion to some of the works of M. Carré; I may mention some others, as they were made known at the Academy of Sciences lately.

In one of these, it was stated that "The virus of dog distemper was so spread in the surrounding atmosphere, through the constant pouring out of virulent secretions from the diseased animals that to realize his experiments, the greatest care

had to be used in keeping his own subjects isolated. The mode of infection which is the most certain and which is by far the most common in natural infection, is by the digestive tract. Whatever is the quantity of injected virus or the mode of infection, there is always a space of two to five days between the introduction of the virus and the appearance of the thermic reaction, which indicates infection. If the animal is very young and the dose sufficiently strong, death will take place in a few days and the only lesion observed will be a pericardial exudation, which is very virulent. If the animal resists the inoculation, the disease will develop then with its classical manifestations. The blood, taken during the febrile stage, is *sterile, but gives the disease.* Very rapidly complications appear on the skin (papules, pustules), on the mucous membranes (virulent coryza), on the serous structures (virulent exudates), on the internal organs (myocarditis, hepatitis), etc. If the exudates remain pure of all kinds of infection and for a sufficient length of time, the other lesions are not alike. The most common of these secondary infections is broncho-pneumonia, which the author has principally studied, and from the lesions of which he has been able to isolate various microbes, some of which have been considered as specific, such as the pasteurella of Ligniéres, principally, the coccus of Mathis, the bacillus of Perez, etc."

* * *

"It is impossible to claim for any of these microbes a marked specificity in the production of the secondary lesions. Injected into the tissues of a fresh dog, they sometimes show quite a marked virulency. But what differentiates them from the filtering virus is that their absorption by the digestive canal is remarkably supported. These secondary microbes come from the external surroundings; they can be easily isolated from the intestine and from the natural openings of the healthy or of the diseased dogs.

"Dog distemper, then, appears as a disease with a complicated etiogeny, due to successive infections which have between them a narrow relation. The first, *the only specific one*, is due

to the filtering virus, which, besides its pathogenic power proper, possesses the remarkable property of annihilating almost entirely the phagocytary protection of the animal infected and of allowing the passage of other microbian agents, which create secondary *non-specific* lesions.

"It is sufficient to infect a fresh animal with the pure filtering virus to see appear on him the ordinary complications of the natural infection, and see in the secondary lesions microbes that the experimenter has not introduced in the organism, microbes which vary and create secondary lesions which are *not specific*, but whose presence could have been detected in the intestine and the natural cavities of the animal before the experimental specific infection."

* * *

This communication was followed by another, resuming a series of experiments made on the nasal discharge, on the cutaneous manifestations, on the exudates, on the discharge, on the lesions of pneumonia, on the blood, etc., and in which the following conclusions are presented: "(1) The disease called distemper in dogs is an affection primitively general, eminently contagious on account of the acute coryza, which gives rise to a virulent discharge. Its specific agent belongs to the group of filtering viruses and possesses a special affinity for serous membranes and for the myocardium. It is doubly dangerous for dogs, by its pathogenic power proper and by the state of less resistance in which, once it has disappeared, it leaves the organism, which is then left without defense against the invasion of microbes from other sources and which, though of little danger by themselves, becomes then able to create very serious and often fatal lesions. (2) The dog, when affected, is specially dangerous in the first days of the disease on account of its virulent coryza. If it is contagious afterwards, it is because the virus has soiled its own tegument and the surrounding objects. (3) To be of good efficacy, the vaccination must act on the filtering virus, which alone possesses the specificity, the secondary lesions being under the influence of peculiar nature, yet not de-

termined, and are due to one or several microbian species, which vary from one diseased animal to another."

Decidedly, a vaccine against distemper is not yet found!!

* * *

A PATHOGNOMONIC SYMPTOM (?) OF RABIES.—Rabies is in some cases quite difficult to diagnosticate, and on that account the following, presented to the Société Centrale by M. Thierry, is worth recording. The symptoms of rabies are obscure, and it is by hazard that this pathognomonic manifestation has been noticed. The observations were made on one male mule, one cow and two steers. The symptom is nothing but an hyperæsthesia of an extreme acuteness at the beginning of the bladder. Called to see a male mule which had colics by retention of urine, and which, unwilling to rise or stand, had shown difficulty in micturating. Exploration by rectum was made, and as the hand was made to press upon the vesical neck, very violent pain was manifested, and the animal, which had been made to stand with great difficulty, suddenly dropped down. A few days after the mule died with rabies.

Some few days after, one cow and two steers belonging to the same owner presented symptoms which were characteristic of dumb or paralytic rabies. On these animals, kept in the standing position, an exploration by rectum was made, and simple pressure upon the origin of the urethra gave also rise to manifestation of great pain. On the second day the cow had complete paralysis. The same hyperæsthesia was also detected by rectal touch in the two steers. The three animals died the same evening.

Is this valuable information? It seems so, if it is taken into consideration that further inquiry revealed the fact that a rabid dog had been destroyed on the premises where the four animals belonged.

At any rate, one will bear in mind that, among the early symptoms of the disease in man, rigidity of the penis is constant. Perhaps there is a certain analogy. It is no doubt worthy of investigation.

To Revive an Apparently Dead Fœtus.—Here is some simple and practical advice which I find in the *Journal of Zoötechny:* It often happens that, after a long and painful delivery in the cow, the young calf is brought to the world giving no signs of life. It seems as if it was dead, and yet this condition of death is only *apparent*, and if the little fellow is left without care the respiration and the circulation will not return, and real death will be the result. To revive the subject, the *central reflexes* must be stimulated. For some, rhythmatic tractions of the tongue will answer. For others, hard flagellations, severely applied, do better, especially if with them energetic frictions are made on the nose with a rough brush or similar instrument. Either of these three modes of treatment may answer, but are not without objection. The tractions of the tongue are tiresome for an operator already tired. The flagellations seem rough and brutal to those who are looking on, so that the frictions on the nose seem certainly the best. But their effects are considerably increased if, instead of resorting to the brushing alone, the mucous membrane of the nasal cavities is directly tickled with a bit of straw, moved about in rotation and rapidly in them. Immediately the calf will take a strong inspiration, and if at that time pressure is made upon the chest, expiration will follow, and little by little respiration and circulation will resume their normal conditions.

This is evidently simple and easy to apply, but perhaps already known to our obstetrician friends in America.

* * *

The Horse and the Automobile.—Who was it that said: Speaking of the horse and automobile, *this will kill that!* Who was it, that announced that the triumph of the latter would mean the death of that noblest conquest of man? What error! Notwithstanding the constantly increasing production of automobiles, the horse still lives, still reigns and triumphs as well as ever.

In the *Chronicle Agricole* of one of my exchanges, I read: "It cannot be repeated too often, that although the industry of

automobiles is always progressing and showing proofs of its increasing activity, always improving, and when the number of automobiles in circulation is always getting larger, and keep on enlarging in enormous proportion, *the value of horses and the number continue to increase also in similar proportion.* And this is not only for one country, but for all. In America, for instance, which is such an excellent market for French draught horses, notwithstanding the fact that automobilism is there in full rage, these facts are made evident by recent statistics. The number of horses in 1900 was only thirteen million animals; in 1905, the figures were raised to seventeen millions, or *an increase of four million head of animals in the space of only five years;* the value of each individual having increased in similar ascending progression. Indeed, fantastic prices have been realized for selected subjects."

Conclusion:—There is no rivalry. The motor has not killed the horse, and the consequence that it may offer will result in stimulating breeders to produce horses that may prove superior in gait, in form, and above all, in speed. Those results are not impossible to reach.

This may serve to console some veterinarians!

* * *

BIBLIOGRAPHY.—A short glance at my bibliographic receipts to close this. Among the communications received, such as the *Quarterly Bulletin of the Chicago Veterinary College*, the ninth report of the New York State Veterinary College, and the eighth semi-annual report of the Cattle Bureau of Massachusetts, I have before me the evidence given by Dr. J. G. Rutherford, of Canada, Veterinary Director-General, before the standing Committee of Agriculture and Colonization. It is an interesting document upon the condition of contagious diseases in the Dominion. I have also the April number of the *Transvaal Agricultural Journal*, where I read in the veterinary section an excellent article on veterinary hygienic principles applicable to stock in South Africa, and also one on black-quarter. These are from the pens of Drs. A. Theiler, C. E. Gray and

Sydney Dodd, M.R.C.V.S. As usual, this number is handsomely illustrated with numerous plates. In the *Archives of Biological Sciences*, published in St. Petersburg by the Imperial Institute of Experimental Medicine of Russia, I must mention one article on the bactericid action of peat-moss upon the bacillus of human pest, by Dr. Schouroupoff, the report of the antirabic vaccination in St. Petersburg by Kraiouchkine, the result of experiments made on the extirpation of the superrenal capsulæ by Krichtopenko, and, again, an article on the pathogenous action of the bacillus of human pest upon certain species of domestic animals. The last received came from Cape Town with the reports of the Veterinary Staff of the Transvaal, from which I extract the following concise paragraph, giving the total number of animals affected with contagious diseases and the number of outbreaks: Anthrax, 15 outbreaks and 3,148 diseased; epizoötic lymphangitis, 15 outbreaks and 69 sick; glanders, 109 and 1,092 sick; lung sickness, 187 and 9,990 sick; redwater, 149 and 7,441 sick; equine scabies, 36 and 234 diseased; Sponsziekte, 78 and 2,273 sick; swine fever, 2 with 115 sick, and finally tuberculosis, 3 with only 3 diseased subjects. A. L.

AN INNOVATION IN VETERINARY JOURNALISM.

We welcome to our desk *The Veterinary Journal*, "an Anglo-American Monthly Review of Veterinary Science;" editors for Great Britain and the Colonies, Col. J. A. Nunn, F. R. C.V. S., F. R. S. E., C. B., D. S.O., C. I. E., Principal Army Veterinary Officer, India; and Frederick Hobday, F. R. C.V. S., F. R. S. E, Sometime Professor in the Royal Veterinary College, London. Editor for the United States of America, W. L. Williams, D. V. D., Professor of Surgery and Obstetrics, New York State Veterinary College, Cornell University, Ithaca, New York.

The number for September while carrying the name of our esteemed collaborator on its title page, does not publish anything from his pen, but we have every reason to believe that

the "American Department" will be occupied in October by a noteworthy contribution upon American veterinary colleges, largely tabular and comparative. We congratulate our English contemporary upon this evidence of enterprise, and upon its good judgment and good fortune in securing so brilliant and conscientious an editor for its essay into the American veterinary field.

There is no sort of question but that the extent and importance of veterinary science in this country should demand more than one literary exponent; two good representative journals would be none too many—*if the profession would support them.* It may be that there has never been a journal published here that appealed to the profession with sufficient force to bring out their loyal coöperation and adherence. We believe the REVIEW has more nearly approached the ideal in veterinary journalism than any similar publication in the English language. It has been enabled to publish a greater number of pages of original material than were ever gathered together in a single volume in any English-speaking country, and we believe that it has a larger number of readers in all parts of the world than were ever placed upon the subscription books of a magazine published in its tongue. But the REVIEW is not a financial success. True, it can and does pay all of its bills promptly, and there is a little surplus; but if its editors were paid commensurate salaries, if it maintained offices, like most scientific or specialty publications do, or if it departed from the strictest economy, the deficit would be considerable, and the profession would either be forced to have a smaller and less worthy representative, or none at all.

Veterinary journalism appears to be less of a success in England than it is in America. The *Journal*, with its years of popularity under the guidance of the very flower of the profession, is constantly changing its character, appearance and policy in the hope of attracting more patronage; for instance, but a short time ago it published "society proceedings" to the exclusion of "original articles" and "reports of cases," while

under the new *régime* the September *Journal* is rich in "clinical articles," but ignores every association meeting in its dual field. Withal, the present number contains but 64 pages of reading matter, while the REVIEW for the same month has 142 pages, and this large number has been frequently exceeded recently. Will the new move by the *Journal* increase its efficiency? its success? The REVIEW sincerely hopes that it will, whether it believes it or not. It is very certain of one point: Editor Williams will make his department exceedingly interesting and very valuable to the profession, and these features alone should attract a goodly number of American readers. His active brain, facile pen, great energy, splendid courage, and intense love of truth and fair play are attributes which will adorn any editorial page.

We bespeak for our Anglo-American contemporary larger proportions of support and success than have ever been vouchsafed to its journalistic ventures in the past.

VETERINARY AND ALLIED DEGREES.

The English love of abbreviated titles and degrees is proverbial. A true son of the tight little isle never omits to follow his name with all that he is entitled to use. These titles, as a rule, stand for honors achieved through effort and ability, and it is commendable that just pride should be felt by the holder of these marks of merit and distinction. The senior editor of the *Veterinary Journal* (London) has enough of such capital letters to fill an extra line; his British co-editor is a good second, while our own Williams, who has just entered Anglo-American journalism as American editor of that publication, appears to be getting the fever. He has always insisted that the Montreal Veterinary College, from whence he obtained his diploma, did not grant a degree, and declared that the best he was entitled to was "V. S.," which was simply an abbreviation of "Veterinary Surgeon." Imagine our surprise when we found that his name was followed on the title page of the *Journal* for September with the degree of "D. V. D." We know from the recent

controversy in the REVIEW that these symbols do not stand for "Doctor of Veterinary Dentistry." With Williams' talent, and the contagion of his environment, we would not be surprised to see him fill up the line before a great while.

OPENING OF THE SCHOOLS.

The veterinary colleges of the country will throw open their doors this month to receive the classes of 1906–07, and everything points to an increase in attendance of young men seeking to become veterinarians. The schools of New York, with their high entrance requirements, can scarcely hope to do much better than last year; the University of Pennsylvania, in the full flush of its recently acquired wealth, with its projected new buildings and equipment in course of development, will probably experience a considerable increase in attendance; while the colleges of Chicago and Kansas City cannot accommodate a much greater number than were on hand at the last session, as they were already crowded. It being the last session when matriculation at two years can be obtained at Ontario, there may be anticipated a rush to get the shorter period, though one can scarcely see the advantage of the diploma where so many States have closed their doors against men with two-year diplomas. Some of the more recently established schools of the Middle West may be expected to have largely augmented classes, and with such encouragement they will in all probability increase their efficiency. Under such a gratifying condition of progress numerically, let our colleges demand a little more from the entrants in the matter of fundamental qualification, and thus each year lift our standard higher, gradually making the *personnel* of our profession more worthy of the science which it represents.

DR. D. ARTHUR HUGHES contributes to the present number of the REVIEW an article entitled "The Meat Inspection Movement and After," in which he discusses from the standpoint of an expert the factors which led up to the sensational clamor against the packing-houses, with a dissection of the merits of

the charges, together with a scrutiny of the law, showing what has been secured to the country through the opportunity afforded to secure good sanitary laws. As the author made a study of the subject while actually engaged in the work of inspection, his article becomes arthoritatively interesting and valuable.

THE first of this month marks the inauguration of another important era in the development of the Bureau of Animal Industry. The new Meat Inspection Bill goes into effect on that date, giving to this country the best protective laws in the world.

IN an operation for appendicitis in a man a few weeks ago, a cherry pit was found in the inflamed appendix; the seed had sprouted and a miniature tree was growing in the cavity. The "daily" which printed the story gave the authority of the attending surgeon that it was the first instance on record where vegetation was known to have flourished in the intestinal canal.

A MONUMENT was recently unveiled in honor of the late Professor Dieckerhoff in the school which was the seat of his great work in behalf of veterinary practice. A number of the friends and admirers of his genius subscribed for a column of red granite supporting a bust of the distinguished veterinarian, and it was placed in the Berlin Veterinary School.

THE "REVIEW" APPRECIATED IN AUSTRALIA.—The following highly appreciated extract from a letter from Dr. Charles Humm, graduate of the Melbourne Veterinary College, dated Warrnambool, State of Victoria, Australia, July 28, 1906, explains itself: "I would like to place on record my appreciation for your publication, the AMERICAN VETERINARY REVIEW, which I receive regularly through my bookseller. I am sure that many others like myself, who are so far from the great centres of veterinary work, must find your paper indispensable if they have any wish to progress and make a success of veterinary practice. In actual practice one finds little time to wade through extensive volumes of veterinary science, and can only consult those on special occasions. Thus the REVIEW supplies a real want, and in short, concise and condensed manner gives the busy man all the latest doings in the veterinary world."

ORIGINAL ARTICLES.

THE AGGLUTINATION METHOD FOR THE DIAGNOSIS OF GLANDERS.

By Veranus A. Moore, Walter J. Taylor and Ward Giltner, Ithaca, N. Y.

Read at the Meeting of the Am. Vet. Med. Association, New Haven, Sept., 1906.

The accurate diagnosis of glanders in obscure cases and in horses that have been exposed but which fail to exhibit symptoms of the disease, is one of the difficult problems in Comparative Medicine. The successive acquisition of definite knowledge of the nature of glanders lesions, of the life history of its specific bacterium and the effect of mallein have each tended to minimize error in diagnosis. The last and apparently most successful method is that based upon the power of the blood serum of an infected animal to agglutinate in high dilutions the infecting bacterium. It is the purpose of this paper to discuss briefly the results that have already been reported from the study of the agglutination of *Bacterium mallei*, in its relation to diagnosis, together with a summary of our findings.

For an intelligent understanding of the phenomenon of agglutination, a brief statement of its history, the properties of agglutinins and the character of agglutination is appended.

In 1889, Charrin and Rogers found that *Pseudomonas pyocyaneus* cultivated in the fluid serum of an animal immunized against that organism, did not produce a diffuse turbidity of the serum such as appears if it is grown in the serum of a non-immunized individual. Instead of being scattered through the culture medium as usual, the organisms were joined in little clumps which settled at the bottom of the tube. Examined microscopically in the immune serum, the Pseudomonas were observed to group themselves in clumps instead of swimming about freely. This was the first recognition of the phenomenon of agglutination, but its application to diagnosis was not made until 1896. In the meantime, Metchnikoff in 1891, Issaeff in

1893, Pfeiffer in 1894, and Bordet in 1895, had all observed the same phenomenon in various lines of experimentation. The macroscopic and microscopic reactions, the importance of proper dilutions, quantitative estimation of agglutinative power, its value in differentiation of bacterial species, the determination of a previous attack of the disease and many other details were described by Grüber and Durham in 1896. Widal was the first to show that the agglutinative power of the serum exists not only in artificially immunized animals and in the blood of convalescents, but also during the early period of infection and at the height of the disease. Widal insisted that the reaction was not one of immunity but one of infection, and his contention, at least on the negative side, has been entirely borne out by later investigators. Widal's discovery was generally confirmed.

The application of agglutination in diagnosis has been more or less successfully made in typhoid fever, hog cholera, Asiatic cholera, pneumonia, bubonic plague, tuberculosis, and other infections.

The literature on serum diagnosis as applied to glanders is far from extensive. It appears that M'Fadyean was the first to record any attempt to determine the agglutinative power of glandered serum. We quote from M'Fadyean (*Journal of Comparative Medicine and Therapeutics* for 1896) what we believe to be the foundation of the present method of serum diagnosis of glanders.

"A remarkable example of the useful application to every-day medical practice of what was at first regarded as a discovery interesting only to bacteriologists, is afforded by the so-called sero-diagnosis of typhoid fever, recently introduced by Professor Widal of Paris.

"It has for some years been known that the blood-serum of an animal experimentally rendered immune against a particular disease exerts a peculiar action on the specific bacteria of that disease, the most manifest effect of this action being a grouping of the bacteria into relatively coarse clumps when

they are freely suspended in liquid. Widal discovered that this action is not confined to animals experimentally made immune, or hyper-vaccinated, but is also possessed by the blood of human beings suffering from typhoid fever, as he showed that it might be utilized in the dignosis of that disease. Grünbaum, Durham and Grüber, and Delepine and Sidebotham have published observations that are confirmatory of Widal's discovery.

"The demonstration of this remarkable property of the blood of typhoid patients immediately suggests that in ordinary bacterial diseases of man and animals the blood may exert a similar effect on the specific microbes, and the purpose of the present note is to put on record some observations which appear to show that the method of sero-diagnosis is applicable to the case of glanders.

"On the 19th of December I collected a few ounces of blood from a horse affected with chronic glanders. The clinical history of the case indicated that the disease had been in existence for several months (nasal discharge, loss of condition, etc.), and the diagnosis of glanders, made by my colleague, Professor Hobday, was verified by a decided reaction to mallein two days before the horse was killed, and by the discovery of typical glanders lesions at the post-mortem examination.

"The blood-serum of this horse when diluted with nine times its volume of sterile bouillon and mixed with an equal volume of bouillon holding in suspension a rich culture of glanders bacilli (three days culture on agar at 37°C.) was found to produce a marked 'clumping' of the bacilli. The reaction was quite distinct after an hour, and at the end of two hours almost the whole of the bacilli had become motionless and collected into large irregular clumps.

"Control observations were made at the same time with blood-serum (diluted to the same extent) from two horses not suspected of being glandered, and since tested by mallein with a negative result. The serum from one of these animals produced no appreciable clumping even after several hours; in the other case a tendency to clumping was observable in some of

the preparations, but it was later in setting in, and never anything like so complete as in the preparations from the glandered horse.

"The observations here referred to were made on hanging-drop preparations viewed under the microscope.

"Should further observations confirm these results, a valuable addition to our methods of diagnosing glanders will have been made. Considering the perfect reliability of the mallein test and the simplicity of its application, it cannot be expected that the method of sero-diagnosis will displace it, for Widal's method must always remain a laboratory test. But the latter has the advantage of being serviceable for diagnosis on the dead subject, and it may be employed as a prompt confirmatory test in those occasional cases in which no glanders lesions, or only lesions of a doubtful character, are discovered at the autopsy of horses that have reacted to mallein."

In 1898, Bourget and Mery examined microscopically the action of the serum on the specific bacteria of two horses affected with acute and one with chronic glanders. The serum of the latter agglutinated at a dilution of about 1–1000. The acute case reacted as high as 1–2000 at room temperature. In repeating the experiments with the serum of non-glandered horses, using normal serum, serum of horses affected with fever and of horses treated with anti-diphtheritic serum, they determined that agglutination was produced under the same conditions at dilutions of 1–50, 1–200 and 300, but never higher. They conclude by saying that these deductions point to a hope that in employing a serum at a dilution of 1–500, one could establish by serum diagnosis whether a horse was glandered or not.

In 1902 Happisch reviewed the work of Pokschischewsky, who sought to ascertain to what extent agglutination appears in the diagnosis of glanders. He used in his experiments dead cultures of *Bacterium mallei* and examined the action of the serum of sixteen sound and eight glandered horses. The method was as follows: 10 cubic centimetres of glycerin bouillon in a test tube were inoculated with *Bacterium mallei*, and

when a considerable cloudiness appeared, after two or three days, the culture was heated in an autoclav for fifteen minutes at 120° C. The blood was drawn from the jugular and the serum diluted and added to the bouillon culture. After the addition, a hanging-drop was prepared from the mixture. In the hanging-drop the agglutination showed itself by the collection of the bacteria in great numbers of small masses in the bouillon. Pokschischewsky concluded that:

The serum of a sound horse agglutinates at a maximum dilution of 1–300 in a bouillon culture.

The serum of glandered horses shows a wider and higher agglutinating power, the reaction being macroscopic at a dilution of 1–500 and microscopic as high as 1–1000. Two horses showed the reaction before and during malleination, and in the latter case the agglutinating power of the blood was doubled. The reaction being microscopic at a dilution of 1-2000.

Arpád found that glanders bacteria were agglutinated with the blood-serum of non-glandered horses in a maximum dilution of 1-350 and of glandered horses at least two to three times as great a dilution. In one case he observed a reaction in a dilution as high as 1–1600.

Fedorowsky undertook the task of demonstrating the agglutination of *Bacterium mallei* from a pathological and differential diagnostic point of view. He made 143 examinations on the action of human blood and that of fifteen different species of animals, all in normal condition. In addition, he tested 118 other specimens of blood from horses affected with glanders and certain other disease, in which agglutination occurred. His conclusions are as follows:

The blood of all animals examined, including guinea-pig, cat, rabbit, dog, sheep, goat, ape, rat, pig, cow, pigeon, hen, duck, goose, and the horse, agglutinated glanders bacteria in greater or smaller masses. The extent of the agglutination varied, in a given dilution, with the susceptibility of the animal to glanders, the higher the dilutions so much greater is the immunity.

Arterial blood agglutinated *Bacterium mallei* somewhat stronger than venous blood. The serous exudates were weaker than venous blood.

The results confirm the assertion of Affanssiews that serum which is kept in the dark at least eleven months does not lose its agglutinating power.

The agglutinating power of serum is lessened by heating to 50°C. and even more by the action of direct and diffuse sunlight.

Filtering through a clay filter does not affect its agglutinating power.

The original agglutinating power increases with glanders intoxication and infection in susceptible as well as glanders-immune animals.

The rising of the agglutinating power during the course of glanders infection, after having reached the maximum sinks rapidly back to the normal.

After the agglutination has been determined the bacteria become weakened in their agglutinable and virulent characters.

The agglutinating power is present not only with the living but with the dead bacteria.

The agglutination of the dead bacteria does not give so sure or as rapid and certain a reaction as the live cultures.

The agglutinating power of the blood remains not only during the infection with glanders but also with some other diseases.

The power of the blood of glandered animals to agglutinate *Bacterium mallei*, exceeds this power in other diseases, to such a degree that the differential diagnostic significance of agglutination in glanders cannot be denied.

Rabieaux tested the blood of nine glandered and eleven non-glandered horses. The serum was collected as pure as possible, diluted in sterile distilled water in proportions of from one to ten to one to five hundred, then mixed in small sterile tubes with an equal volume of a culture of *Bacterium mallei* in peptonized glycerin free bouillon 24–72 hours old. The mixture thus prepared was placed in an incubator 35–37°C.

and examined at intervals under the microscope. In each case control tests were made on normal serum. At this temperature both glandered and non-glandered serum agglutinated but a difference in the rapidity and intensity of the reaction was noted. Little difference was observed in the reaction at dilutions of 1–10 to 1–50. In glandered serum there were fewer motile-like bacteria between the more compact masses and the reaction was observable in from twenty minutes to three hours, while two to six hours was necessary in non-glandered serum. With dilutions of 1–100 to 1–250 the difference was more marked. In eighteen hours the non-glandered serum agglutinated in masses produced in from one to ten hours by the glandered serum. The non-glandered serum may not agglutinate at all. In dilutions above 1–400 non-glandered serum never agglutinated while glandered serum agglutinated at from 1–500 to 1–1500. He placed 1–1000 at the minimum for condemnation. The rapidity varies with the individual. In two cases at a dilution of 1–1000, the result was obtained in from two to three hours, but not completely until after eighteen to thirty-six hours had elapsed. Sometimes forty-eight hours were required but never more than seventy-two. If the subject had an elevated temperature, the reaction occurred in from two to six hours, at a dilution of 1–1500. The whole of the bacteria may be collected in compact masses, or there may be loose clumps of fifteen to twenty organisms. In serum of high agglutinating power the bacteria in multiplying remains in short chains. The phenomenon may be visible to the unaided eye in dilutions of 1–10 or 1–100 and exceptionally in 1–1000 by small clumps collecting and falling to the bottom leaving a clear stratum. When agitated, they do not produce a uniform turbidity as seen in control cultures. This is not permanent in high dilutions. The injection of mallein does not interfere if the serum is taken after the normal temperature returns. At 12–15°C. the phenomenon sets in less rapidly; at 3–5°C. it may be lost, but the low temperature does not destroy the agglutinating power.

Reinecke concluded that the serum from the sound as well as from the sick horse gave rise to agglutination, but in horses not suffering from glanders the agglutination was not observed macroscopically at a dilution over 1–100 and microscopically over 1–300, while in four tests in which the horses were glandered the agglutination was macroscopic at from 1–500 to 1–1000 and microscopic at 1–1500 to 1–2000.

Bonome has more recently conducted some experiments on the variation of the agglutinin and precipitine content of blood during glanders infection. His work, however, has very little direct bearing upon the utilization of agglutination in the diagnosis of this disease.

Schnürer in the Vienna Veterinary College has found the agglutination method to be superior to any other means of diagnosing glanders. His procedure does not differ essentially from that employed by Schütz and Miessner. It is used officially in the diagnosis of glanders in Austria.

Schütz and Miessner, of Berlin, have made an extended investigation of the serum diagnosis for glanders. They have succeeded to such a degree that their method has been adopted officially for the diagnosis of glanders in all suspected cases in the army horses of Prussia. They recommended the use of glanders bacteria that have been killed by heating them for two hours at 60°C. The killed organisms are suspended in a carbolized-salt solution. The suspension was made of a light greyish color and distributed in small test tubes, putting 2 c.c. in each. Various quantities of the diluted blood-serum were added to this emulsion and the mixture incubated for 24–30 hours at 37°C.

The results of these experiments demonstrated that while the blood-serum of healthy horses agglutinated the bacteria in dilutions of 1–400 at the highest the serum of glandered horses reacted in dilutions of from 1–1000 to 1–2000. The blood-serum of horses artificially infected with a virulent culture gave a reaction beginning on the fifth to the seventh day after inoculation, the agglutinating power increasing during the following four or five days, remaining at its maximum for about one

month, and after that gradually diminished. This is of practical importance in detecting glanders in a stable where infected horses have been destroyed, the test being made two or three weeks later. Experience led to the belief that a previous malleination had no effect on the agglutinating power of the serum.

The blood of non-glandered but diseased horses reacted occasionally in higher dilutions. Thus they found in cases of pleurisy and pneumonia that a reaction occurred in a dilution of 1–1000 while in other cases it did not occur in dilutions higher than 1–800. In the Pathological Institute in the Veterinary College in Berlin during two years, the blood-serum of 2,209 horses was tested for glanders with the following results:

Of 1,911 horses free from glanders; in

1232	or	64.8	per cent.	the blood-serum	agglutinated	1-100 to 1-300
363	"	19	"	"	"	1-400
135	"	7.1	"	"	"	1-500
123	"	6.4	"	"	"	1-600
41	"	2.2	"	"	"	1-800
11	"	.5	"	"	"	1-1000

A reaction higher than 1–1000 was not observed in a single case.

Of 298 glandered horses; in

6	or	2	per cent.	the blood-serum	agglutinated	at 1-400
12	"	4	"	"	"	" 1-500
44	"	14.8	"	"	"	" 1-600
47	"	15.8	"	"	"	" 1-800
75	"	25.2	"	"	"	" 1-1000
49	"	16.4	"	"	"	" 1-1500
65	"	21.8	"	"	"	" 1-2000

A study of their tables shows that the greater percentage of reactions with normal serum has been with very low dilutions, while the greater percentage with glandered serum has reacted in dilutions so high that they were positively diagnostic. Their experience shows that in glandered horses, the agglutinating power of the blood is with the passing of time gradually diminished, while in horses free from glanders the agglutinating power of the blood does not change. Based upon their experi-

ence, they recommend the following method for the eradication of glanders:

Twenty to fifty grammes of blood are taken from the glandered or suspected horse, recording the date and history of the case, and sent to the experiment station.

All horses whose blood agglutinates in dilutions of 1–1000 or higher should be destroyed.

The same way, all horses should be destroyed whose blood agglutinates in dilutions of only 1–500 to 1–800 if they show symptoms of glanders.

All other horses in which the agglutination is 1–500 to 1–800, should be isolated and destroyed, only when justified, by a second test in which the maximum dilution for agglutination is changed; on the other hand, they may be pronounced free from glanders if at the second test it remains unchanged.

After establishing glanders, the blood of horses in the same stable should be tested after three weeks, and this should be repeated until the last two tests show in all horses individually a uniform reaction.

During the past year, we have made a special study of the agglutination method for the diagnosis of glanders. For the greater part, our purpose has been to corroborate the method employed by Schütz and Miessner. The agglutination method, if reliable, has so many advantages, especially in sanitary work, over other methods of diagnosis, that it seemed eminently fitting that it should be thoroughly tested and its advantages and disadvantages determined. In the beginning, we utilized, as others have done, the guinea-pig for testing the action of the infected serum on various cultures of *Bacterium mallei.* After we obtained a suitable culture, we procured the blood of healthy horses, horses suffering from various disorders, and those infected with glanders. Later we applied the test to all suspected cases. The method and the results of our examinations are appended.

Method.

Culture of Bacterim Mallei.—As pointed out by Schütz and

Miessner, all cultures of *Bacterium mallei* do not agglutinate satisfactorily. It was also shown by their work that a suitable culture when obtained is liable, at unexpected intervals, to lose its responsiveness to the agglutinin. This can be forestalled by passing the organism through a guinea-pig at least once in three weeks. The organisms were grown for from 48 to 72 hours on acid glycerin agar (5 per cent. glycerin and with a reaction of + 2.9 to phenol-phthalen). In order to have a suitable culture on hand, sub-cultures should be made daily. A culture more than 72 hours old should not be used.

Test Fluid.—This is prepared by washing the growth from the agar culture by the aid of a sterile wire loop, into distilled water containing .85 per cent. sodium chloride and .5 per cent. carbolic acid crystals. This suspension is then placed in a thermostat at 60°C. for two hours, which kills the bacteria. A temperature higher than 65°C. and lower than 60°C. should be avoided. After heating, the suspension is thoroughly triturated and filtered through sterile cotton. Thorough trituration of the emulsified growth is essential before filtering. The filtrate thus prepared is diluted with the carbolized salt solution until it is of a faintly cloudy appearance. The proper dilution of the filtrate can only be determined by experience. The carbolized salt solution has been found to deteriorate after one week. It gives the best results if kept cool.

Procuring the Serum.—The serum is easily obtained. At least ten cubic centimetres of blood are drawn from the jugular vein, under aseptic precautions, into a small sterile bottle and sent to the laboratory. As soon as the clot forms, the supernatant serum is placed in a centrifuge and all the sediment thrown down, leaving the liquid perfectly clear. One cubic centimetre of the serum is then added to thirty-nine cubic centimetres of a physiological salt solution, which makes a dilution of 1–40. We have found that the serum should be secured as soon as possible after the blood is drawn. If necessary to delay the test, the serum has given the best results if kept at about 10°C. until used. The diluted serum tends to deteriorate if

kept more than 24 to 48 hours. Even during this time it should be held at a low temperature. Serum which has decomposed after being drawn loses its agglutinating power.

Making the Test.

Three* cubic centimetres of the "test fluid" are placed in each of several small test tubes. With a sterile pipette, the diluted serum is added to the tubes of test fluid and thoroughly mixed. In making the different dilutions, the amount of diluted serum to be used is readily ascertained by the following table:

Dilution of serum.	Amount of diluted serum.	Amount of test fluid.	Dilution.
1-40	1.2 c.c.	3 c.c.	1-100
1-40	.6 "	3 "	1-200
1-40	.405 "	3 "	1-300
1-40	.3 "	3 "	1-400
1-40	.24 "	3 "	1-500
1-40	.195 "	3 "	1-600
1-40	.15 "	3 "	1-800
1-40	.12 "	3 "	1-1000
1-40	.105 "	3 "	1-1200
1-40	.09 "	3 "	1-1500
1-40	.06 "	3 "	1-2000
1-40	.03 "	3 "	1-4000
1-40	.015 "	3 "	1-8000

Where dilutions greater than 1–1000 are made, a serum diluted 1–80 may be used to better advantage, unless the pipette employed is very finely graduated. In this case the amount of diluted serum for a certain dilution must be double that indicated in the table.

The mixture thus prepared is placed in an incubator at 37°C. for twenty-four to thirty hours. A temperature higher than 37°C. interferes with the agglutination.

Reaction.—The reaction consists of a layer of the agglutinated bacteria covering the entire convexity at the bottom of the tube. This film-like sediment may become so dense that it

* We have found 3 c.c. a more desirable quantity than 2 c.c. as recommended by Schütz and Miessner.

rolls in at the periphery. The supernatant fluid becomes clear in the lower dilutions, but in the higher ones the clarification may not be complete, showing that all the bacteria have not become agglutinated. This is further evidenced by the fact that the layer is less dense in the higher dilutions. The reaction may begin in six hours, but cannot be considered complete until twenty-four to thirty-six hours have elapsed. If no reaction appears in twenty-four hours it cannot be considered negative as it may occur in from thirty to forty hours after setting. Often, however, a reaction appears in less than twenty-four hours.

After the agglutination is completed, further standing produces no visible changes in the test fluid.

A negative result shows a small, round concentrated spot of sediment in the centre of the convexity at the bottom of the tube, the test fluid remaining apparently unchanged even after several weeks.

In our examinations, we have confined our work very largely to the macroscopic appearances. It is believed, however, that not infrequently helpful information could be obtained by a microscopic examination as well. In testing suspected blood, we have followed the plan of making for each examination, dilutions of 1–200, 1–500, 1–800, 1–1000 and 1–1200. By this method we were able to tell if the culture is reliable by observing the reaction at the dilution of 1–200, as this should agglutinate even with non-glandered serum. If a reaction occurred in the absence of symptoms at 1–800, the case was considered suspicious and retested in from a few days to three weeks later. If a reaction appeared at 1–1000, 1–1200 or higher, the animal was considered glandered.

Thus far, as shown in tables No. 1 and 2, we have not had a reaction with the serum from a non-glandered horse above 1–500. The majority failed to react above 1–400. In all cases where we have had a reaction of 1–1000 or higher, the animal has shown conclusive clinical evidence of glanders, or upon post-mortem examination has exhibited characteristic lesions of

that disease. This corresponds to the findings of Schütz and Miessner.

We have applied this test to the blood-serum of a total of 81 horses. Some of these were in good health, some were suffering from diseases other than glanders, still others, and by far the largest number, were horses believed to be glandered or suspected of having the disease because of certain symptoms, or they appeared to be healthy but had been exposed. A summary of the percentages of the maximum dilutions of the serum at which agglutination occurred is appended:

Of 19 healthy horses; in

3	or	15.8	per cent.	the	maximum	dilution	was	1-200
2	"	10.5	"	"	"	"	"	1-300
11	"	57.9	"	"	"	"	"	1-400
3	"	.8	"	"	"	"	"	1-500

Of 12 diseased but not glandered horses; in

1	or	8.3	per cent.	the	maximum	dilution	was	1-200
5	"	41.7	"	"	"	"	"	1-300
4	"	33.3	"	"	"	"	"	1-400
2	"	16.7	"	"	"	"	"	1-500

Of 50 horses suspected of having glanders; in

1	or	2	per cent.	the	maximum	dilution	was	1-3200
1	"	2	"	"	"	"	"	1-2800
1	"	2	"	"	"	"	"	1-2000
7	"	14	"	"	"	"	"	1-1600
14	"	28	"	"	"	"	"	1-1500
12	"	24	"	"	"	"	"	1-1400
4	"	8	"	"	"	"	"	1-1200
1	"	2	"	"	"	"	"	1-1000
1	"	2	"	"	"	"	"	1-800
8	"	16	"	"	"	"	"	1-500 or less.

The dilutions in which agglutination occurred in the serum of each of 68 horses including the three classes of cases are appended:

I.—Agglutination of Bacterium Mallei with Serum from Healthy Horses.

Number.	1:100	1:200	1:300	1:400	1:500	1:600	1:700	1:800	1:900	1:1000	1:1200
1	x	x	x	x							
2	x	x	x	x							
3	x	x	x	x							
4	x	x	x	x							
5	x	x	x	x							
6	x	x									
7	x	x									
8	x	x									
9	x	x	x								
10	x	x	x	x							
11	x	x	x	x	x						
12	x	x	x	x							
13	x	x	x	x							
14	x	x	x								
15	x	x	x	x							
16	x	x	x	x							
17	x	x	x	x	x						
18	x	x	x	x	x						
19	x	x	x	x							

II.—Agglutination of Bacterium Mallei with Serum of Diseased but not Glandered Horses.

Disease.	1-100	1-200	1-300	1-400	1-500	1-600	1-700
Œdema of Nasal Septum	x	x	x	x			
Acute Skin Eruption	x	x	x	x	x		
Azoturia	x	x	x				
Azoturia	x	x	x				
Azoturia	x	x					
Influenza, Temp, 105.3°	x	x	x				
Pneumonia, Temp. 102.3°	x	x	x	x			
Typhoid Pneumonia, Temp. 106.3°	x	x	x	x	x		
Typhoid Pneumonia, Temp. 103°.	x	x	x				
Acute Laminitis	x	x	x	x			
Acute Influenza, Temp. 106.2°	x	x	x	x			
Distemper	x	x	x				

III.—Agglutination of Bacterium Mallei with the Serum of Horses Suffering with, or Suspected of Having Glanders.

Number.	1:200	1:300	1:400	1:500	1:600	1:800	1:1000	1:1200	1:1400	1:1500	1:1600	1:1800	1:2000	1:2200	1:2400	1:2500	1:2600	1:2700	1:2800	1:2900	1:3000	1:3100	1:3200
1	x	x	x	x	x	x	x	x	x	x	x												
2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	x	x	x	x	x	x	x	x	x	x	x												
4	x	x	x	x	x	x	x	x	x	x	x												
5	x	x	x	x	x	x	x	x	x														
6	x	x	x	x																			

7	x	x	x	x	x	x	x	x	x												
8	x	x	x	x	x	x	x	x	x	x	x										
9	x	x	x	x	x	x	x	x	x	x	x										
10	x	x	x																		
11	x	x	x	x	x	x	x	x	x												
12	x	x	x	x	x	x	x	x													
13	x	x	x	x	x	x	x	x	x	x											
14	x	x	x																		
15	x	x	x	x	x	x	x	x	x	x	x										
16	x	x	x																		
17	x	x	x																		
18	x	x	x	x	x	x	x	x	x	x											
19	x	x	x	x	x	x	x	x	x	x											
20	x	x	x	x	x	x	x	x	x	x											
21	x	x																			
22	x	x	x	x	x	x	x	x	x	x	x	x	x	x							
23	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
24	x	x	x	x	x	x	x	x	x	x	x										
25	x	x	x	x	x	x															
26	x	x	x	x																	
27	x	x	x	x	x	x	x														
28	x	x																			
29	x	x	x	x	x	x	x	x	x	x											
30	x	x	x	x	x	x	x	x													
31	x	x	x	x	x	x	x	x													
32	x	x	x	x	x	x	x	x													
33	x	x	x	x	x	x	x	x	x	x											
34	x	x	x	x	x	x	x	x	x	x											
35	x	x	x	x	x	x	x	x	x												
36	x	x	x	x	x	x	x	x	x												
37	x	x	x	x	x	x	x	x	x	x											

The clinical history of all the cases recorded in table III as reported by the veterinarians who had them in charge shows that in every case in which the agglutination occurred in the maximum dilution of 1–500 or lower did not have glanders, and that every case in which agglutination at dilutions of 1–600 or higher the horse was suffering from some form of glanders.

The delicacy of the method is illustrated in case No. 11. The horse had been exposed but showed at the time the blood was taken no evidence of the disease. Three weeks later it developed numerous typical skin lesions. Again in No. 15 the horse exhibited suspicious symptoms but it was thought by some veterinarians not to be glandered. After the test the horse was condemned as it gave it positive reaction to mallein and on post-mortem found to contain typical glanders lesions.

In two cases not reported in this table the agglutination occurred with a maximum dilution of 1–400 and 1–500 respectively. These we reported as negative; but the veterinarians in charge replied that the horses were glandered and had been destroyed. Unfortunately, they were not examined post-mortem.

It has already been pointed out by others that the agglutinating power of the serum diminishes quite rapidly after the disease becomes established. We have not had an opportunity to test this phase of the reaction.

Recently, Mr. Cassius Way has applied this method to cases in the service of Dr. Berns, of Brooklyn, N. Y. Up to the time of writing he reports 90 animals in which it has been used with very satisfactory results. The application of this method to all the animals suspected of having glanders in the various stages of infection and under all the varied conditions met with in a larger practice will be necessary to determine its limitations.

The application of the serum diagnosis of glanders in state and city sanitary work appears to have many advantages over the methods heretofore employed. The blood can be drawn by any veterinarian from the suspected horse with very little trouble and sent to the laboratory. However, the fact should be kept in mind that the method is a laboratory test. Its requirements are such that it cannot be made in any bacteriological laboratory without sufficient notice and preparation. The necessary solutions must be ready, and cultures of *Bacterium mallei* which possess the agglutinating power must be in stock and of the proper age. To keep these in hand, requires more time, labor and expense than can be given by laboratory men for an occasional diagnosis. The practical work, therefore, will be restricted to boards of health laboratories or those doing the sanitary work for the city or state and perhaps to those of practitioners who have a large practice in stables where cases of glanders are of common occurrence. As in Prussia and Austria, it would seem advisable for each larger city and possibly

state to have at least one laboratory where this work could be done. From these, sterile bottles for collecting the blood and instructions could easily be sent to any veterinarian who wished to have a positive diagnosis made.

Conclusions.

From the results we have obtained in testing the various procedures in the serum diagnosis of glanders as set forth by various investigators and summarized in the preceding pages, the following conclusions seem to be warranted:

1. The diagnosis of glanders by the agglutination method is easier and quite as accurate as mallein. It has this advantage, that it can be used in those cases where there is a rise of temperature and consequently where mallein could not be employed.

2. There appears to be no objections to the recommendations of Schütz and Miessner for the eradication of glanders based on this method of diagnosis.

3. The maximum dilution of normal serum that we have found capable of producing agglutination is 1–500. This is higher than that reported by others. It occurs, however, in but very few cases.

4. The maximum agglutinating dilution of the serum of diseased horses not glandered has not exceeded that of normal serum. This is lower than that recorded by others. We recognize, however, that our experience has been quite limited.

5. The interpretation of the results where the maximum dilution is about 1–500 gives the greatest difficulty. All cases of this kind, unless there are unquestioned diagnostic symptoms or lesions, should be retained for a subsequent test.

6. The method, while simple in its details, requires in its application the closest of attention and constant checking, because of the liability of the culture losing unexpectedly its susceptibility to the agglutinins.

In carrying out our work we have been greatly assisted by Dr. George H. Berns and Dr. E. B. Ackerman, of Brooklyn, N. Y., who have sent us samples of blood whenever requested.

For this most helpful service, we desire to express our appreciation and thanks.

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NORFOLK, VA., has the largest and best equipped horse show building in the country. It is steel framed, 400 feet long, 173 feet wide, with more square feet of floor space than Madison Square Garden. The ring is 285 feet long. On the grounds are a half-mile track, a steeplechase course, and stable accommodations for 300 horses.

PRACTICAL APPLICATION AND RESULTS OF THE AGGLUTINATION METHOD OF DIAGNOSING GLANDERS IN ONE HUNDRED AND FIFTY-TWO CASES.

By George H. Berns, D. V. S., and Cassius Way, Brooklyn, N. Y.

Presented to the 43d Annual Meeting of the American Veterinary Medical Association, at New Haven, Conn., Aug. 21–24, 1906.

Early this spring I was requested by Dr. V. A. Moore to furnish a number of specimens of blood from horses suffering from a variety of diseases and a few from animals which I knew to be glandered, as he desired to experiment with a new method for diagnosing this disease, and, if possible, pick out the glandered specimens without any knowledge of their source or history.

About twenty specimens of blood were sent during the months of February and March from horses suffering from various diseases, three of which were from well-developed cases of acute glanders. The bottles were labeled with various names or initials and color and sex of patients only. Dr. Moore promptly reported positive reactions in the glandered animals and negative in all the rest. After this the blood of all glandered and suspicious animals coming under our care was sent to Dr. Moore, and I am pleased to say that with one exception his diagnoses were confirmed by clinical symptoms or subsequent developments. The exceptional case was one which had been exposed to the infection for one or two days only, when the blood was drawn. Dr. Moore's report being negative, no further attention was paid to the horse until six months later, when we found him greatly emaciated, temperature 102, submaxillary lymph glands enlarged and lobulated. He was again subjected to the blood test and it promptly agglutinated 1–800.

Through the courtesy and kind assistance of Dr. Moore, I was enabled to fit up a small laboratory at our hospital in Brooklyn, and fortunate enough to secure the services of Mr.

Cassius Way, who has been Dr. Moore's assistant in the department of pathology in the New York State Veterinary College for a number of years, and who is thoroughly familiar with the technique and all details of this method.

During the last two months we have examined 152 specimens of blood from horses showing unmistakable symptoms, from others which were slightly suspicious by reason of persistent elevation of temperature, and other conditions, and from still others which had only been exposed to the infection and showed no symptoms whatever. One hundred and twenty-five samples were obtained from animals in our own practice, and the remaining 27 samples were sent by veterinarians practicing in Brooklyn and vicinity. We obtained the blood by obstructing the jugular vein as for phlebotomy, introducing a hypodermic needle into the distended bloodvessel, and by continuing the pressure upon the vein allow about one ounce of blood to flow into a sterilized bottle. The bottles were labeled numerically, beginning with No. 1, and an accurate record was kept of the clinical history of each case.

Of the 125 samples 19 reacted in the proportion of 1–800
45 " " " " " 1–500
61 " " " " " 1–200

(which is said to be the reaction of normal blood). In some cases the reactions were very prompt and occurred in eight hours after having been placed in the incubator, where other samples required from 24 to 48 hours before agglutination took place. In some cases the reactions were strong and well defined, where other samples, placed under identically the same conditions, reacted but faintly.

Of the 27 samples sent by Drs. Ackerman, Shaw, Smith, Lowe, English, Dixon, W. L. Bell, and others,

20 reacted 1–800
2 " 1–500
5 " 1–200

Of the 19 animals in our own practice reacting 1–800, 11 showed well-marked clinical symptoms of glanders or farcy.

Nine were reported to the Department of Health and destroyed. Two being young and vigorous subjects, and owned by a firm having exceptional facilities, were strictly quarantined in a shed and kept for further observation. The remaining eight reacters, 1–800, were in good condition and did not show any indications of disease except a slight elevation of temperature in three or four cases. These horses were also quarantined and kept for further observations. Of the 45 reacters, 1–500, one developed acute symptoms three weeks later, reacted this time 1–800, and was destroyed. The remaining 44 showing no physical symptoms were isolated as well as possible, properly cared for and continued at their usual work.

All of the horses tested either showed symptoms more or less marked, or they came from stables in which one or more cases had existed.

In all cases the stables were thoroughly disinfected and all possible precautions taken to guard against spreading the disease. The 54 remaining reacters were placed under treatment, each horse receiving 2 dr. of iod. potash mornings and ½ oz. Fowler's solution of arsenic evenings in drinking water, and all were systematically inspected every Sunday morning since the original tests were made. Ten cases all from the same stable have been under observation since June 16, and most of them have been re-tested repeatedly, not only by this new method, but with mallein also, and the results are most interesting.

Among them are Nos. 1 and 3, which are the two horses referred to in the beginning of this report as having shown marked clinical symptoms, and reacting 1–800. After the agglutination test they were malleined, and both promptly reacted to the extent of 3 and $3\frac{3}{5}$ degrees respectively.

One horse had a sticky discharge from one nostril with indurated lymph glands, and the other showed a corded condition of the lymphatics with multiple abscesses on side of face, and a lobulated submaxillary.

Both animals showed a gradual improvement in clinical symptoms, and on July 17th were re-tested and again reacted

to both tests—agglutination 1–800; mallein above 3 degrees.

On August 6th the physical symptoms had almost entirely subsided in both cases, and the same results were obtained with the agglutination test. Six of the eight reacters, 1–800, referred to above, are also from the same stable and were again submitted to both tests on July 17th and August 6th, with same results as in the original test of June 16th. These last six horses are eating well, improving in condition, and, excepting a slight elevation of temperature, are for the time being to all appearances in perfect health.

I regret to say that I am not in a position to report the history and termination of the 27 cases examined for other veterinarians, for most of them have failed to comply with my request for a clinical report. Drs. Ackerman, Shaw, and J. Payne Lowe being the exceptions.

Case No. 51 proved of special interest by reason of the fact that it occurred in a stable of 38 horses, kept in a clean but poorly lighted and ill-ventilated stable. The patient showed no special clinical symptoms, except increased respiratory movements, loss of strength and condition for five or six weeks preceding my visit and a temperature of 102. His blood reacted strongly in eight hours, 1–800. He was sent to the hospital, destroyed, and a post-mortem examination made, which revealed most typical lesions of pulmonary glanders. A portion of this lung was packed in ice, and sent to Dr. Moore, who pronounced it a splendid specimen and promised to make an effort to get cultures from it, but whether he was successful or not I am unable to say. The 37 other animals which had lived in the same stable with the last described case, were subjected to the agglutination test and two reacted at 1–800 and eight at 1–500. The two reacting 1–800 were strictly quarantined; the eight reacting 1–500 were kept by themselves as well as possible, and kept at their usual work. All of them were placed under treatment and they will be systematically examined once a week for some time to come. These cases are included in the original 125 above referred to.

I have only mentioned two stables in this report, as all the other reacters, probably thirty in number, are in smaller stables distributed all over Brooklyn. They are still under our care, receive their medicine, will be regularly examined at one or two weeks' intervals, re-tested when deemed advisable, and, if possible, kept under our observation until they either develop clinical symptoms or cease to react to the test.

While the agglutination test is still in its infancy and our experiments are by no means completed, and our cases not sufficient in number to warrant positive conclusions, I am of the opinion that this method is a most valuable aid in diagnosing glanders, and from the above it would seem that this test not only reveals the presence of infection, but, to a certain extent at least, the degree of infection, by the reaction being either prompt or tardy, strong or weak, and the agglutination taking place in varying proportions from 1–200 up to 1–1200 or even higher.

If it is now, or if it ever becomes an established fact, that by this test, or the mallein test, reactions only take place when an animal is infected with the poison of glanders in a greater or lesser degree, it follows that the poison is eliminated from the system or rendered entirely harmless in many instances, and that there is a possibility at least of some cases making a good recovery under favorable conditions and environments.

In the Tichenor-Grand Company's new stable at Broadway and 65th Street, New York, not an inch of wood has been used in its construction. Even the window casings and frames are of steel, while the stalls are of truss metal lath and concrete, the first of the kind ever built. No theatre or hotel in the world, it is said, is so thoroughly fireproof as this new home for horses. It will be ready for 300 boarders on the 1st of this month. Not only the horses, but the coachmen and grooms are to have sumptuous quarters, the pleasantest room in the building being the coachman's billiard room on the fifth floor. Lockers and dressing rooms, with shower baths, are features of the equipment. It is to be ten stories high, with riding and sales ring on the roof garden.

THE MEAT INSPECTION MOVEMENT AND AFTER.

By D. Arthur Hughes, Ph. D., D. V. M., Cornell University.

Meat inspection is the talk of the day. Never before in the history of federal supervision of American meat food supplies has so much prominence been given to the engaging question are our meats and meat products clean and harmless for human consumption. In an article written for this journal (Vol. XXIX., No. 1, Apr., 1905), entitled "The Value of Meat Inspection to the Public Health," I gave a brief account of the American system of meat inspection, pointing out the dangers of animal disease to the public health, the methods of meeting the danger employed by the government and what protection the federal inspection assures to the people. As that article was widely read and favorably commented upon both in my own profession and in the profession of human medicine—it being reprinted in *The New York and Philadelphia Medical Journal*—I wish to say, before launching into the present subject, that I did not therein pronounce the American system of inspection perfect, nor did I intentionally gloss any of its defects. I gave a simple account of the system as it was. The inspection regulations, based on the law of 1891, which were effective until Aug. 1 last, made use of every part of the limited power allowed by the statute. Those regulations were a credit to the men of the Bureau of Animal Industry who made them and administered them. During the violence of the movement which brought into existence the new law, when everyone was investigation-mad, the Department of Agriculture escaped practically scot-free from serious, vitally hurtful criticism. The reason is obvious—the Department had done sufficiently well all that the Meat Inspection law of 1891 permitted it to do.

Yet as the excitement, now about over, brought into such extraordinary prominence before the public eye the federal veterinary inspector and his burden, there can be nothing lost by a scrutiny of the movement which made so much commotion.

I. THE MOVEMENT WHICH CHANGED THE UNITED STATES MEAT INSPECTION SYSTEM AS ESTABLISHED UNDER THE LAW OF 1891.

How the movement was begun—The conditions alleged to have been found in the larger packing houses—What conditions were found—Reasons for the conditions found, defects in the law—The remedy.

Sometimes the origin of a movement, national in its sweep, is veiled in obscurity. This cannot be said of the movement which became fruitful in the laws of June 30, 1906. The origin of the movement for a better meat inspection law can be traced to articles published in the London *Lancet*, Jan. 7, 14, 21 and 28, 1905. Adolphe Smith, the writer of them, was an English sanitary specialist sent to Chicago as a special commissioner by that leading British medical weekly to investigate the conditions in the packing houses. For fourteen years he had reported on sanitary questions for the *Lancet*, during which he had personally visited, studied and written upon all the great abattoirs of Europe. His preparation for the work assigned to him can hardly be honestly questioned, nor the honorableness of the man's purpose. In his report to the *Lancet* he fortified his statements with numerous photographs taken on the spot and reproduced in electrotype to accompany his articles. For long years he had studied at first hand the central government abattoir of the German capital, the Schlachthof of Berlin, which is faultless, the houses at Hanover, Mannheim, Hamburg, Vienna, Buda-Pesth, Brussels and Paris. That is to say, he was intimately acquainted with the best modern slaughter houses of Europe, and because of this long fourteen years' experience in sanitary work for the foremost medical journal in Great Britain, his statements would be credited as reliable by the British medical fraternity the world over. Accordingly the editors of the *Lancet*, in their "Annus Medicus," or summary of medical events for 1905, published Dec. 30, of that year, in an article "The American Beef Trust and the Chicago Stock Yards," give a *résumé* of Mr. Smith's statements and mince no words in their

scathing denunciation of conditions said to be found in Chicago by the special commissioner.

As items in the medical press which have a popular interest are apt to leak into the lay press, we find, early in 1905, articles in *Success* and in *Leslie's Weekly* guilefully insinuating that the federal inspection service itself was at fault in certain particulars. The movement hurriedly came to a head in the beginning of 1906. In January editorials appeared in *The New York and Philadelphia Medical Journal* answering the accusations made by the *Lancet*. Shortly that hideous book, "The Jungle," by Upton Sinclair, came from press. J. Ogden Armour answered his enemies in *The Saturday Evening Post* and was, in part, replied to by Sinclair in his malevolent article in *Everybody's Magazine*, "The Condemned Meat Industry." *The World's Work*, pretending not to circulate "Literature of Exposure," nevertheless printed the malicious article by Dr. Jacques, represented to be "A Picture of Meat Inspection," besides a gratuitous article by a lawyer, "The Failure of Government Inspection." By this time, May, 1906, the movement had reached fever heat and the daily press was full of articles on the meat question; for the scientific commission, Drs. Mohler, Steddom and Hauk, sent to Chicago by President Roosevelt to investigate statements on conditions there made in the *Lancet* and elsewhere, had made its report and had been followed by a popular commission, Messrs. Neill and Reynolds, who were to give "the average judgment of the average mind" on the Chicago packing houses. Though the report of the scientific commission, as appeared in the examination of Commissioners Neill and Reynolds before the Agricultural Committee of Congress, corroborated their main points, the text of the report of the scientists was never printed. However, the conditions described in the Neill-Reynolds report, whether rightfully or wrongfully, were enough to pitch the popular animus, against conditions described, to fury. The agitation, whether it had basis in fact or not, begun by the *Lancet* Jan., 1904, and reaching its highest pitch after the publication of the Neill-

Reynolds report, June 5, 1906, found fruitage in the new Meat Inspection law of June 30, 1906, and the Pure Food law of the same date.

First of all, the movement consisted in a scientific propaganda started by the *Lancet* on statements having some basis in fact. Later it was a popular propaganda in which the public mind was embroiled by gross exaggeration about conditions in the Chicago packing houses, or by sentimentality expressed by those unfamiliar with the difficulties of the slaughtering industry, or by the malice of socialistic reformers who could see nothing right in a rich man or his business, or by misinformation from the misguided who dished up according to the popular demand—given out by all sorts of individuals either in book form, magazine or newspaper articles.

When we inquire about the conditions alleged to have been found in the larger packing houses, and turn to the special commissioner sent to investigate conditions by the *Lancet*, we see that he is possessed too much with the spirit of the agitator who has "found" something, and too little with the spirit of the scientist who takes time to get correct notions on his subject. A large discount must be made for some of his opinions. His study for many years of the state or city owned European abattoirs, in most respects ideal from a sanitary standpoint, gave him a partiality for municipal inspection. He did not take sufficient time to study just what the function of the municipal and federal inspectors respectively was in Chicago. He compounds the two, belittles the federal work as it was and makes misstatements about it which even a cursory study of the Reports of the Bureau of Animal Industry would have corrected for him. Whether we like it or not, the packing trade has been taken hold of by great companies, and will continue to be held by them. It is useless for foreign sanitary experts to advise us to correct conditions by setting up ideal municipal inspection such as they found in Europe. They do not know what we mean by "interstate trade" and the power of the federal government to control it. They did not see that the only way to

secure uniformity in sanitary conditions both in the Chicago houses and in the houses outside that centre was by strict federal legislation. Both the editors of the *Lancet* and their special commissioner had an unnecessary hatred of the Beef "Trust," and gave us, gratis, advice how to remedy unsanitary conditions in Chicago, which was unsuited to America.

But to pass from the comparative truthfulness of Adolphe Smith's statements to those of Upton Sinclair, gives us the sensation which Satan must have had when he fell from the battlements of Heaven, so graphically described by the poet Milton. Great credit must be given the American people for their willingness to wade through the revolting pages of Upton Sinclair. For reckless disregard for truth; for a form of inanity, which, by its socialistic extravagance, would blind the world to the true idea of a great business; for a story aiming only to fulminate unknowing ones against the manner in which an important industry is conducted, one must turn to "The Jungle." Few so-called realists outside of France or Russia would dare to flaunt on their pages the sickening details and the vulgar description here cast before us. If this is art, we want no more of it. Like Macbeth's physic, we would "cast it to the dogs." It takes brazen effrontery to nauseate us with hateful and disgusting pictures in no way appealing to the sense of beauty nor nobility. If the story were saturated with truth the writing of the work would be pardonable; as everyone who has spent much time in the great abattoirs knows, it is replete with godless exaggeration, the story becomes utterly condemnable.

As a socialist of the school of Karl Marx, if there is one thing more than another which inflames Sinclair's ire it is capital and its owner. Hence the defamation, libel and attempt to arouse class hatred instanced in his abuse of Armour and the Armour interests. It is the purpose of Sinclair to defame the character of Armour, the great capitalist, whom he pillories under the name of "Durham," because he is a capitalist and the Armour capital in the packing interests is an object of horror to him. That a man of Armour's business ability should initi-

ate and organize such a stupendous mass of powerful interests calls not for praise from him but hate. Everything and everybody that Armour touches becomes to Sinclair an object of hatred. Packers are to be hated. Everything they do or attempt to do is to be held up to scorn and derision. United States Government inspectors are in the packing houses. That is enough for Sinclair. To him their duteousness must be only a blind. Covertly they must be working wholly for the interests of the capitalists.

Nevertheless "The Jungle" had its place in the history of the movement leading to the Meat Inspection law of June 30, 1906. It was read widely and believed in, either in whole or in part, by many, and consequently its bad blood, its hatred and malice, its wholesale exaggeration, entered into the effect which found finality in the new law. More than any one piece of writing it was referred to again and again. Many people did not believe the indictments that it made, yet their passions were aroused by the horrors which were said to exist. It fomented feelings of disgust. Already the *Lancet* had made a few statements somewhat similar, only far milder, which became quoted in the medical press and leaked into the secular press. That helped "The Jungle." When on top of it all came the work of the U. S. Commissioners and the publication of the Neill-Reynolds report, people did not stop to be judicially minded in such a situation. That there was any truth at all in the statements that had been afloat about the packing houses, lashed popular fury to frenzy. This it was which forced through the new Meat Inspection law in less than a month.

The wrath of these lucky producers of excitement, Sinclair and his ilk, fell heavily primarily upon the packers; secondarily upon the meat inspection service. The packers, to him, are monsters; the government inspectors "the laziest, most dishonest, slipshod, careless and indifferent of all the people in the whole packing house." To speak of all the injustice done to the packers in "The Jungle" would take us too far afield.

However, to take one specific instance, when unsanitary conditions are mentioned nothing is ever said in the packers' favor. There has never been any sanitary supervision of the abattoirs by the government, no requirements to speak of federal or municipal, no general agreement nor complete understanding on this question at any time. The owners have followed their own judgment in the matter. During the recent agitation people have been led to believe that every single process of the preparation of meats was done under conditions "of wildest anarchy," whereas the fact is, though there were no doubt many specific instances of unsanitary acts by individual employés, though at times and in places there was uncleanliness and disorder, nevertheless the great American packing companies have all had a set policy forbidding uncleanliness. The owners, superintendents and foremen have fought against filth and dirt. Year by year larger and larger sums have been spent in improvements looking to more cleanliness, and a man can say, without the tinge of a blush on his face, that many of the processes are as near perfect from a sanitary standpoint as commercial meat preparatory processes ever can be. Everyone knows that attractiveness of appearance of goods, excellent taste and quality are points always to be borne in mind in the preparation of foods for sale. In all their processes the packers have kept this in mind in no small measure. The federal government has had nothing to do with this; nevertheless, the government inspectors in the work assigned to them under the regulations, far from being lazy, slipshod and dishonest, have performed their duties, within the limitations allowed by the old law, in the strictest manner consonant with their orders. The charges made by Upton Sinclair and the scolding Dr. Jacques against the federal inspection have no foundation in fact. How little Sinclair knew about the inspectors (except by hearsay, and how much can a man rely upon hearsay) is seen in his reiterated statement in his book and articles that the government inspectors wear blue uniforms with brass buttons. That tell-tale error has been a source of amusement to

federal veterinary inspectors everywhere in the land. Within the limits allowed by the law of 1891 the federal veterinary inspectors have always fulfilled their trust.

In the attacks made on the packing houses and the federal work, whenever that was touched upon by writers with pens dipped in gall, like Sinclair and Jacques, it is to be noted that their only aim is scurrility. If they were talking about the packing houses they had nothing but evil to say of them ; if they perchance touched upon the federal work, they had nothing to say of the immense amount of good it was doing, of the large share of protection it afforded to the public health, of the numerous commendable points of the system. For instance, Dr. Jacques, in his paper " A Picture of Meat Inspection," for his own self-glorification, conveys the impression by figures presented that if it were not for the municipal inspection in Chicago the hundreds of thousands of pounds of meat condemned by the federal inspectors would never have been tanked. Whereas he must have known when he made that statement that whenever a municipality, where there is federal inspection, does not tank meats condemned by federal inspectors the latter do it in the strictest manner themselves. This is a striking instance of Dr. Jacques' malice, in which he is second only to Upton Sinclair. Thus these attacks on the conditions in the packing houses or the federal work therein were mainly a pot-pourri of confusion due to ignorance and malicious intention to bring about effect regardless of truth.

What faulty conditions, we may now ask, were found? At this late date there is no need to deny that some of the criticisms of the houses had foundation in fact. There could never have been any chance for the movement to have effectiveness in legislation if there were no truth in the Neill-Reynolds report. There would be no need to rear such a system of regulations as will go into force Oct. 1 next to do away with grossly unsanitary conditions or prevent their reoccurrence, if there never had existed the conditions they are meant to forbid. Just as every veterinarian inspecting animals for the Govern-

ment knows the movement produced the most sickening exaggeration, so also he knows in his own mind that there was some show of reason for criticism. What were these unsanitary conditions which needed to be reformed?

Whether the facts were brought out by Messrs. Neill and Reynolds, or by Drs. Mohler, Steddom and Hauk, does not matter. The question is, was there any truth in the report made public? The statements made by the *Lancet* were much the same as those made in the Neill Reynolds report. The facts are, there were certain unsanitary conditions in very many of the abattoirs throughout the country, doing an interstate and foreign trade, which needed to be righted—in the direction of cleanliness, light and ventilation; there were abuses in the canning industry which should be done away with, as well as faults in preparatory processes or parts of processes which might be bettered; there were, as is to be expected among ignorant foreign employés, and particularly in the more or less necessarily uncleanly conditions of a slaughter house, unsanitary appearance of the workers and numerous instances of filthy acts which would bear supervision and control.

We may give as reasons for these things that in part they were due to the immense growth of the trade. The rush of work and inability to keep pace with the demand upon the departments of the houses left less time for that care for the condition of the houses which would be given otherwise. Many of the abattoirs were built piecemeal, usually in a hurry, to keep pace with the trade. This, however, does not explain away the existing evils: it only accounts for them.

That such conditions existed at all was due to omissions in the fundamental law which founded the Inspection Division of the Bureau of Animal Industry in 1891. In the first place, under the law, the federal inspection had to stop with examination of carcasses on the killing beds. There was no prerogative calling for inspection during the processes of the preparation of meat food products granted. In the second place, no power was given to require sanitary conditions in the abattoirs

nor to require personal cleanliness in the employés. In the third place, as there was no federal Pure Food law, there was no power given the federal inspectors to prevent misbranding nor to prevent adulteration, so they had no right to say what should go into cans, nor prevent deceit in labelling tins or other receptacles. In the fourth place, the law of 1891 was defective in that the inspection service was dependent for existence on the *annual* appropriation of Congress. There was no *permanent* fund to defray the expenses. The fund was always too small to meet the rapid growth of trade. Of recent years the appropriation had been gradually declining rather than increasing. Just at the time when the Bureau was getting calls for inspectors in numerous small houses wishing to do an export trade, none could be given them because of deficiency of the appropriation, which last year was just about $800,000 for the fiscal year. At this time there came a crisis in the affairs of the Inspection Division of the Bureau. Instead of advancing by placing inspectors in new centres the force had to be cut down and inspectors withdrawn from older official stations. In the fifth place, the chief protection given under the old law was to foreign people rather than to our own people. There was no power granted to compel animals and meats to be inspected for interstate trade, whereas animals and meats for foreign trade had to be inspected. As a matter of fact, because of deficiency of appropriation, even the privilege of inspection was not granted for much meat going into interstate traffic.

If there were defects in the law of 1891 was there need of a remedy, what form should it take, how should it be carried through?

Though it be granted that the vast majority of the animals that come from the corn belt or the Texas plains are thoroughly healthy—a fact which has been constantly borne out in the statements of Secretary Wilson, of statements appearing in such magazines as *The Breeder's Gazette* and corroborated in the reports of the Bureau of Animal Industry—and borne out to my own satisfaction in my own experience in the inspection

of hundreds of thousands of animals from those regions, hardly one or two per cent. having anything at all the matter with them. Though it be true that Upton Sinclair's statements were found by the federal Commission 95 per cent. false. Though it be true that by the lay federal Commissioners and by numerous reporters for the newspapers the world was made to harshly judge the packing house conditions and often, we will say, mistook an occasional and sporadic incident noticed in the houses as the usual way the processes were conducted. Though the fact was overlooked that great sums of money had always been spent and were, during the agitation, being spent for the purpose of cleanliness in the houses. In spite of all this the fact remains, the processes from the cutting of the carcass up to the time of barreling and boxing were not under federal supervision ; that the federal government had been given no authority to look after the sanitary condition of the abattoirs, of the way the work was conducted, nor the personal cleanliness of the employés ; that the federal officials could not put so much as a little finger on millions of tons of meats going into the interstate trade from small houses. The Bureau of Animal Industry lacked sufficient money and sufficient power. The government inspection of animals and carcasses was admirable as far as it went. True ! There could be no denial that much was omitted, nor was this unknown to the government officials. Again and again it was spoken of by Dr. Salmon. The inspection was not carried sufficiently far. The sanitary conditions of houses, persons, processes—and this in small and large houses everywhere which did an interstate business—should be under the federal eye. Then American meats and meat food products would be beyond reproach.

The form that the remedy should take, whatever is was to be, should go deep into the root of things ; should take cognizance of the limitations of the prerogatives of that part of the Executive branch of the Department of Agriculture, the Bureau of Animal Industry, upon which the new work, if it came, should fall. From the first everybody saw that the only safe-

guard against possible evils must be in strong federal law recognizing all the past rights of the Meat Inspection Division of the Bureau of Animal Industry and extending its prerogatives to cover all the defects in the law of 1891. Nor would an inspection law alone suffice, a concomitant of it must be a Pure Food law to prevent evils in the canning industry. Thus it was necessary to define adulteration, misbranding, and prohibit poisonous or deleterious substances. "Foods are held adulterated if containing any substance reducing or lowering, or injuriously affecting the quality or strength; when any substance has been substituted wholly or in part for the articles; when any valuable constituent has been abstracted; when mixed, colored, powdered, coated or stained to conceal damage or inferiority, or when containing any poisonous or deleterious ingredients have been added." "Misbranding applies to all drugs or article of food, or articles which enter into composition of food, the package or label of which bears any statement, devise or design regarding such articles or the ingredients or substances contained therein, which shall be false or misleading in any particular, or to any food or drug product which is falsely branded as to the state, territory or country in which it is manufactured or produced."

The question how the remedy should have been obtained, how the necessary measures should have been carried through Congress, is an open one. Criticism has been made of the rush with which the measure was pushed through or of the speed with which the movement was carried to an issue. The opinion has been expressed that the harrying tales brought out in the Neill-Reynolds report should never have been published; that a national commission of pathologists and sanitary experts should have been appointed to calmly consider the charges. But sentiment is a large factor in food making and in the sale of foods. The answer to the statement that the houses were no more uncleanly than kitchens of restaurants is that both should be conducted sanitarily. Because kitchens are dirty is no reason why great houses from which comes the bulk of the nation's

meat food should not be uniformly kept in a reasonable sanitary state. The analogy is a false one anyway. The federal government can control the sanitation of centres from which the bulk of meat foods come; the sanitation of a hotel or restaurant is a local matter perhaps chiefly controllable by boycott. The national legislative body is apt to move slowly anyway—it took seventeen years to get the Pure Food law through Congress. Even though the harrying tales told of the Chicago houses were untrue, and a large part of them were untrue, the facts remain: that there was no law governing the sanitation of buildings, of meat food preparatory processes, nor regarding personal cleanliness, and no government assurance as to the wholesomeness nor fitness of the contents of the can or package for human food. We may say that the criticisms during the movement pointed to all sorts of fantastical ideals in the public mind on the question in what does cleanliness consist—many of them inapplicable to the packing houses. However, the wrath of the people showed that though cleanly ideals were vague in the public mind, they existed, and that a law should be enacted sufficient to crystallize these ideals in the form of practical sanitary regulations for the packing houses, which would satisfy popular demand for wholesome products and cleanly manner of preparation of them. Whatever may be said of the popular clamor, or of the method wherewith the law was put through, it is certain that our sanitary principles, as scientific men, should carry us as far in the demand for a reasonable sanitation, if not farther, than was the popular demand during the heat of the movement for a new inspection law.

II. AFTER THE MOVEMENT: WHAT IT ACCOMPLISHED.

The new Meat Inspection law and the Pure Food law—The regulations based on the law, what they are, their defects—What is now to be expected, overhauling of abattoirs, inspectors in all their departments, greater protection of health.

In speaking of the new Meat Inspection law of June 30,

1906, we may inquire what are the main points in which it differs from the old law of 1891. Conservatism has always been an element in executive federal administration. The belief in 1891 was that the inspection at time of slaughter would very largely protect the public health. This was true enough as disease is easiest detected at that time. The time was not ripe for so complete an inspection as is at present desired. To make a start at inspection of livestock and carcasses was no doubt the plan of the Department. The perfection of a plan to protect the public health against maladies set up by the consumption of improper meats must come gradually when the public had become educated to a knowledge of the dangers therefrom.

The old Meat Inspection law of 1891 concerned itself chiefly with examination of animals before slaughter and after death at the killing beds. As far as definite inspection for disease went, the work was done then, and then only. The prerogatives of the inspectors are now greatly extended. First, the inspection is required of animals and meats for export but, in addition, all animals and meats, except those for sale by retail dealers or butchers, not only may but must be inspected if they are to pass into the interstate trade. This is made not a privilege but an obligation. All houses wheresoever doing an interstate trade must have inspection. Second, the kind of animals and their meats to be inspected are cattle, sheep, swine and *goats*. Though goats at the great centres have been inspected since 1891, they were not expressly mentioned in the old law. Third, the inspection covers all animals, carcasses, parts of carcasses, meats and meat food products. This means that there must be an ante-mortem inspection, a post-mortem inspection on the killing beds, a reinspection at the docks when carcasses or their parts are to be placed in refrigerator cars or when meats are to pass into rooms for preparation for foods, an inspection of all stages of the preparation of meats or meat food products. Fourth, the inspection concerns itself with sanitation in the abattoirs and in the pens and adjoining buildings used for animals or the preparation of meat foods. This means that there is no ques-

tion touching the sanitary condition of buildings, the contents of buildings used in preparation of meat foods, the personal appearance of the laborers, which is not under supervision of the federal officers. Fifth, right is given the inspectors to dispose of by tanking all condemned meats. This lifts any doubt as to the authority of the Department of Agriculture to dispose of condemned animals, their carcasses or parts, meats or meat food products. Sixth, the system of labelling, stamping and branding is greatly extended so that government marks, or words required by the government, are placed on every package of meat or meat food product coming from packing houses. All this marking is to be directly under federal supervision.

The federal Pure Food law of June 30, 1906, supplements the new Meat Inspection law and adds much power to the Department of Agriculture not granted by the Beveridge bill. Its provision on misbranding, which I have already quoted, strengthens the hands of the inspectors in their authority over trade labels to be used by the companies on packages of meats or meat food products of any kind. The declarations in that law against false or deceitful labels, which are defined, forbids any hope of misrepresentation of the contents of cans or packages. Besides forbidding dyes, chemicals or preservatives in meat foods deleterious to health the law also reads "food products are declared adulterated if they consist in whole or in part of a filthy, decomposed or putrid animal or vegetable substance or any portion of an animal unfit for food, whether manufactured or not. Or if it is the product of a diseased animal or one that died otherwise than by slaughter." Thus we see that the Pure Food law aids the Meat Inspection law in that it forbids the contents of a can or package to be other than represented to be, while at the same time it shuts out the possibility of the can containing drugs hurtful to human health or that the contents should be in whole or in part composed of forbidden animal substances.

We may now see how the prerogatives granted in these laws are taken advantage of by the Department of Agriculture. In

other words we may exhibit how the rules and regulations recently set forth, Aug. 1, 1906, in Order No. 137, cover every reasonable demand made in the press during the course of the movement for better meat inspection. Besides we may add every weakness in the system of inspection discoverable by experience in the operation of the inspection between 1891–1906 has been made good.

First, the regulations, following the law, provide for the extension of the inspection to every house doing an interstate business. Last autumn the newspapers drew attention to the need of federal inspection in numerous small houses throughout the country, particularly west of the Mississippi. These with all others of the same kind are given inspection under the regulations. The regulations provide for as strict, indeed stricter, inspection for all meat food products to go into the interstate trade as formerly was given for meats for the export trade. Second, the regulation on goats. The business of raising goats is increasing rapidly in this country. It appears in the law that it is illegal to sell these animals, their carcasses or parts except under their proper name. In recent years there has been a large business in goat meat from the great packing centres and the carcasses and parts have been sold as mutton. Goats under the new regulations will be given the same inspection as sheep, but under the Pure Food law their meat cannot be misbranded as mutton. Third, there are some modifications in the ante-mortem inspection. The evil of conniving to make money on animals with a "U. S. Reject" tag in their ear, placed there at time of ante-mortem inspection, is done away with. No animals are now *rejected* in ante-mortem inspection. A "U. S. Suspect" tag is placed in the ear of a suspected animal and it is sold to the companies as suspected. If, on the killing beds, the animal is without blemish the full market price must be paid for it. Fourth, the post-mortem inspection is made much more strict. Animals may be condemned for diseases or noxious conditions not mentioned previously in the regulations. For instance, hogs which have been carelessly al-

lowed to get into a scalding vat alive must be condemned. Not only dead hogs must be condemned, but those in a dying condition. This prevents the sticking of prostrated animals, and claiming, as they were alive, no lesions showing, they are fit for human food. Fifth, the right to reinspect carcasses or parts, passed at the killing beds, at any time, and to condemn if found necessary, is taken full advantage of. Previously when a carcass was once passed that was the end of it. The packer could do whatever he pleased with it. By the new regulation the inspectors may take a carcass, side or quarter in the refrigeration room or loading dock or after it is cut up to go to the sausage or canning room. Furthermore they can reinspect at any time or place deemed fit by the Department.

Sixth, the regulations make ample provision for supervision of all departments where meat is prepared for food—canning, pickling, curing, smoking, cooking, lard preparation and that of oleomargarine, sausage making. That there may be no doubt how far this supervision goes we read "if at any time during the handling of any meat or meat food product, or at any time after the packing or canning of any such product, any portion or package shall be found to be unwholesome, unhealthful or otherwise unfit for human food, such portions or packages shall be condemned and disposed of in the manner described in Regula. 18"—that is, it shall be tagged as condemned, held for tankage and tanked under supervision of a federal employé. Seventh, nothing could be more complete than the regulations on sanitation. They give implicit orders on the cleanly appearance of the buildings in general and rooms in particular; of the trucks, trays and other receptacles for meats, tools and machinery; of the aprons, smocks and other clothing of employés of the companies; of toilet rooms, urinals and dressing rooms; of lighting and ventilation of rooms where food is prepared, with the order that no toilet rooms will be allowed to ventilate into them; of the impossibility of allowing persons afflicted with infectious diseases to be in the abattoirs; that no part of a building may be used for purposes incompatible with

proper sanitation; that butchers must cleanse and disinfect their hands and arms after killing diseased carcasses, together with their tools, and that the killing of animals suspected of disease must be done before or after the regular killing; that carcasses must be prevented from falling on the floor; that plans of new plants or old ones to be renovated must be submitted beforehand to the Secretary of Agriculture. Eighth, careful rules are laid down on condemnation, tanks and tanking of the condemned about which there can be no misunderstanding. Condemned meats are to be placed in a government "condemned room" under official lock, at definite times followed to the tanks by an inspector, the tank sealed at bottom, condemned meats or meat products placed therein after being covered with a coloring matter under the officer's eye, the upper part of the tank also put under government seal, the steam turned on and kept up for twelve hours, finally the seals broken by the inspector. Ninth, an elaborate system of labelling, stamping and branding has been devised. Under the old law the government stamp for passed meats appeared only on boxes, barrels, firkins and the like. Now the government carries its supervision of meats and meat products so far as to keep its eye on every can or package coming out of an abattoir. The stencils to be used by the packers, the brands and other devices for designation of meats are to be first approved by the Department. When in addition to this the Pure Food law empowers the Department with the right to pass upon trade labels before they can be placed on packages of any sort by the packers, that even these cannot be placed upon packages without the supervision of a Department employé, and that the constituents of a food product "shall (not) contain any substance which lessens its wholesomeness, nor any drug, chemical or dye (unless specifically provided for by federal statute) or preservative other than common salt, sugar, wood smoke, vinegar, pure spices, and, pending further inquiry, saltpetre," it looks as if the regulations are nearly perfect.

According to my thinking there is, however, one fault to be

found—due rather to a defect in the Meat Inspection law than to inadvertence in the makers of the Regulations based on the law. The statute reads, an inspection shall be made of cattle, swine, sheep and goats, the carcasses, parts of carcasses and meat food products thereof. During the agitation for a new law it was brought out that cans of boned chicken contained at times anything but chicken, and the question arises why were not fowls and other birds and their meat food products included in the statute? The great packing companies have in recent years been building up an immense business in foods made from turkeys and chickens. Sometimes it has been said, rightly or wrongly we know not, that evils arise from the lack of inspection of birds at the large slaughter houses. Veterinarians know very well how prone chickens are to have avian tuberculosis, asthenia, roup and chicken cholera; how subject turkeys are to entero-hepatitis, geese to goose septicæmia. The iniquities that are possible when these birds are not subject to ante-mortem and post-mortem inspection at the packing houses cannot be overlooked. True the Pure Food law gives the inspectors a supervision of birds and their food products in the canning rooms. It looks as if the time to detect the contagious diseases, at least, which would make birds condemnable would be before slaughter and at time of slaughter.

Certainly during the oncoming and after the passage of such laws as these of June 30, 1906, reforms were likely to come in the appearance of the packing houses. The right is granted the Secretary of Agriculture to require a particular grade of sanitary perfection before full inspection under the new law could be allowed. All abattoirs desiring this inspection, and all were really required to have it, must make application *de novo* for the inspection—as if they had never had any—and agree to live up to the new regulations. The Secretary reserved the right to pass upon old abattoirs before the inspection would be granted, and required that plans for alterations should be submitted to him and that plans for new abattoirs should take the same course. The regulations definitely specify that

they are to go into full force Oct. 1. Time was therefore given the companies to come up in a reasonable manner to the demands of the regulations before the right and privilege of complete inspection would be allowed. The result has been an overhauling of many abattoirs. Many changes went on during the storm and stress of the movement, under the pressure, perhaps, of public revolt. Much is at present being done and more will be done under the full enforcement of the regulations.

An enumeration of the kinds of inspection would be as follows—ante-mortem, post-mortem, microscopic and chemical inspection (for laboratories of the Inspection Division of the Bureau of Animal Industry are being planned for the trade centres), supervision of labelling, stencilling, stamping, branding and car sealing, departmental inspection in the rooms for food preparation, reinspection at any time, sanitary inspection. But a horde of men will be required to do all this work. From whence are they to come? The ante-mortem and post-mortem work will be done by veterinary inspectors, as before; work like the sanitary, chemical and microscopic inspection will at least be under the care of veterinarians. The rest of the work will be under the supervision of professional inspectors. Frequent examinations are being held to obtain eligibles, though there will be an increasing difficulty to obtain men because of unattractive remuneration. In the selection of departmental inspectors to go into the food preparation rooms the government has taken advantage of the fact that there are numerous capable young men who have had many years of experience as inspectors, in the employ of the companies, who could be induced to seek government employment and use their experience for the public good. Hundreds of such men have passed the special Civil Service examination and been stationed in abattoirs, away from the point where they were originally employed, to work under the superintendence of government veterinarians as inspectors in departments where meat food products are made.

We may well rejoice in the institution of the inspection that I have attempted carefully to describe. Yet in simple jus-

tice it should be said that American consumers are marked off by the new legislation into two classes—the unprotected and the protected. For there is a sanitary question involved in the limitation of the federal power to goods which are to pass into the interstate trade.

The unprotected are the people of the country side, the rural villagers, or those in small towns or even cities where meats and meat food supplies are constantly consumed without federal or any other inspection. The nefarious traffic, within state confines, can still go on in diseased, spoiled or uncleanly meat. Where there is no strict municipal inspection there can come in from the environs into the city untold tons of questionable meats for consumption in the cities and towns. The new federal statute makes the provision that the heavy federal hand may fall on any such meats which may pass into minor interstate trade. Even a novice can see though that there is still grave danger in places where the federal statute cannot reach the evil. In such places municipal or state law is imperative.

Thanks to the new statute the number of the protected is vastly increased. Ever and ever there is a tendency to centralization of the beef industry in places and conditions where the full force of the federal law holds good. The bulk of the supply comes from the large companies. The hundreds of small houses doing an interstate business will in time have federal inspection. The former always had had inspection; the latter now will have it. We understand that the federal government proposes to extend its official supervision, under the power granted it in the new law, to the lesser interstate traffic in animal foods along the rivers which make state lines where a good deal of iniquity probably exists. The Bureau of Animal Industry may be depended upon to exercise a strong hand here. In the several ways mentioned the federal inspection will cover a very large share of the meat and meat food supply. Immediately we may expect great results. The protection of the majority of American consumers is now far greater by reason of the superiority of the new inspection and the extent to which it is to be carried.

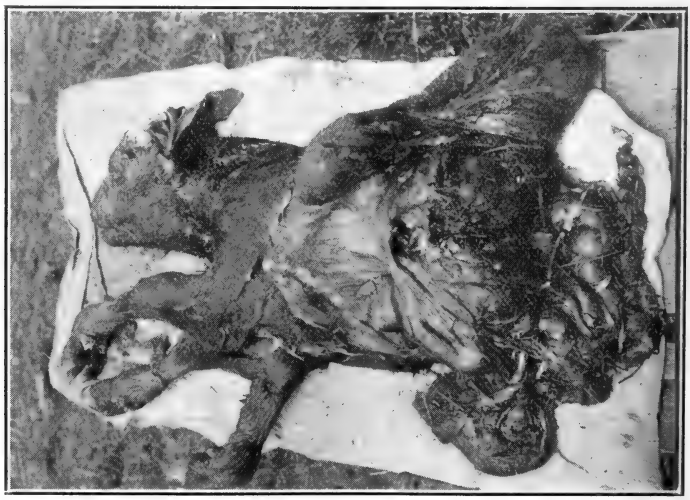
REPORTS OF CASES.

"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."

A CASE OF OBSTETRICS.

By R. F. HOADLEY, V. S., Yorkville, Ill.

I was called six miles east to attend a Holstein cow that could not deliver her calf. She was down and apparently had not been laboring long. I ruptured the water sacks, and found the fœtus alive, but it died during the hour's hard work it took to remove it. Starting from the upper third of the scapula the skin was separated down toward the ensiform cartilage of the sternum and from there in an oblique direction toward the external angle of the ileum. The skin looked as if it had been



cut with a sharp knife—the edge of which had turned slightly white and looked healthy. The hind limbs were bent up over the back and the point of one hock joint was lodged tightly in a fold of skin—so tightly that it could scarcely be dislodged after removal of the fœtus. The hind-quarters seemed to be turned almost inside out, exposing all the abdominal viscera

and most of the ribs on one side. The heart and lungs seemed to be normally contained. This case is interesting to me because I cannot understand this *skinning alive process*, as this fœtus had not been touched with a knife.

MYCOTIC GASTRO-ENTERITIS OF CATTLE.*

By H. E. Titus, V. S., Lafayette, Indiana.

This condition among cattle in my section last fall assumed almost an epizoötic form. When I say that I know of at least 150 cases, I am making a safe estimate. However, some veterinarians have been misled and diagnosed these cases as corn-stalk disease and offer no treatment, when in fact they are very susceptible to treatment. I did not meet with a single case of corn-stalk disease last fall. A history of the last case I was called to see, on Tuesday, Jan. 9, ten miles east of Lafayette, will serve for a description of the condition under which we find these cases. The owner of these cattle, upon going to the yard in the morning, found two steers down and two more reeling around as if they were scarcely able to stand. Telephoned me at 6 o'clock, and I called to see them. The two that were able to stand would walk into the fence or any object without seeing it, fall down, and get up again, as if badly scared; visible mucous membranes congested; one steer in particular stood leaning with his side against a rack, seemingly sound asleep. Arouse him, he would fall, but was able to get up again. I learned from the owner that some nine or ten days before he turned nine of these steers on 30 acres of corn-stalks that had not been pastured, and it was the only field that contained mouldy corn. This piece was planted in April, and a great deal of the corn was mouldy, and in husking the mouldy corn was left in the field.

Pathological Anatomy:—The mucous membrane of the stomach and intestines are infiltrated, tumefied, and dotted with ecchymoses, contents of intestines watery and streaked with blood, lymph glands soft. The lungs, heart, the meninges and the brain are hyperæmic and ecchymosed. Prognosis favorable. Treatment:—Saline purgatives freely, stimulants, alcohol, camphor, and hypodermics, followed by a tonic treatment, restricted diet; after this they commenced to recover.

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* Presented at Annual Meeting of Indiana State V. M. A., Jan. 10, 1906.

DISLOCATION OF BOTH PATELLÆ AT SAME TIME.*

By H. E. TITUS, V. S., Lafayette, Indiana.

I have reduced a great many dislocated patellæ, but this was my first experience with a dislocation of both at the same time, and to me it was a very interesting case, because my patient, a two-year-old German coach stallion, was on the main floor of a show barn with some twenty prospective buyers viewing him in this peculiar position, this occurring after he was taken from his stall to enter the ring to be inspected along with others by the buyers.

The history of this case shows that no doubt it was due to the extreme weakened condition the colt was in, as he, just over seven days, and having a very rough voyage and contracting acclimation fever as he landed, placed the patient in such a condition that a dislocation of this nature was much more easy than in most any other class of cases.

Five or six strong men placed a rail under the hind-quarters and carried him to a single stall, where I reduced the dislocation and fastened both limbs ahead and applied a blister, and after five or six days removed my fastenings, and in changing stalls the dislocation again occurred. I had him carried to a box, reduced dislocation, applied another blister, turned him loose and prescribed a tonic.

Colt made a complete recovery with a *slight* enlargement of the joint, which has entirely disappeared.

A NEW EXPERIENCE WITH MALLEIN.

By W. E. A. WYMAN, M. D. V., V. S., Covington, Ky.

Some time ago the writer was requested to examine a horse having a nasal discharge. Inspection showed a glutinous, hæmorrhagic, non-smelling discharge; nasal and maxillary bone of right side of face bulged some; general appearance of body good; age 11; pulse and temperature normal; teeth normal. Palpation showed submaxillary gland adhering to bone and grape-like in formation. The owner was informed that in all probability a foreign growth in the sinus was present, but that a test for glanders by mallein would be proper and indicated. A male guinea-pig which happened to be on hand got a pocket of nasal discharge. The temperature previous to malleinization ran 99.3; 99.4; 99.2. At ten that night the horse was injected with P., D. & Co.'s mallein. The tem-

*Presented to Annual Meeting of Indiana State V. M. A., Jan. 10, 1906.

perature, taken every two hours from 6 A. M., ran as follows: 6 A. M., 101; 8 A. M., 102; 10 A. M., 102.4; 12 noon, 103.4; 2 P. M., 104; 4 P. M., 104.4* On the strength of this performance the animal was condemned. The post-mortem revealed a malignant growth filling part of the maxillary and frontal sinus. Absolutely no indication of glanders. Internal organs, as lungs, etc., normal, excepting some emphysematous changes on edge of lungs. The guinea-pig, after considerable swelling at the site of inoculation, which subsided, remained well. He was inoculated just eleven weeks ago. Of course this does not shatter my faith in the value of mallein, but after all—How about it?

TWO SPECIMENS FROM AUSTRALIA—ACTINOMYCOSIS OF THE EYE—A DENTAL CURIOSITY.

By CHAS. HUMM, G. M. C.V. S., Warrnambool, State of Victoria, Australia.

I enclose two photos. The first is a specimen of actinomycosis, which probably started about the membrana nictitans. Further than this I can give no history.

The second is a dental specimen, which I value highly. I look upon it as a case of atavism—a "hitting back" to the typical mammalian dental formula. In this I would like to call your attention to the presence of a permanent premolar (extra) situated in the bony palate and pressing the first right premolar out of position, and the presence of two extra permanent incisors (the two central and two outer incisors of right side have been removed to show this latter). The animal was about six years old, and I much regret that in this case also I cannot give any history.

* At no time during the mallein test did the horse show any marked depression of the sensorium, nor was the swelling following the injection large or very painful.

BOVINE MONSTROSITY.

By J. HARRISON, V. S., Maple Rapids, Mich.

The calf illustrated herewith is offered as a contribution to the large number of such freaks reported from time to time in the REVIEW. It occurred in my practice a short time ago.

The calf is lying on its back in the picture. Its neck is about six inches long, and the head is turned just half way around or upside down, and grows out from the sternum. The two front legs grow out just above the neck, and lie to one side of the head and neck. The hind legs are also turned half around, and grow out from the abdomen, the tail being below and between the legs. The tail for four or five inches from its end is denuded of hair from decomposition.

"YOU'RE a great big calf!" cried the huffy girl. "Suppose I am," replied the good-natured youth; "my father was a cowboy."—*(Detroit Free Press.)*

THE TUBERCULOSIS OF PARROTS.—E. Delbano, of Hamburg *(Journal de Médecine de Bordeaux*, June 3, 1906), having made some investigations with a view of elucidating the tuberculosis of parrots, has come to the conclusion that parrots in captivity contract tuberculosis from human tuberculous subjects. He also maintains that the bacilli of avian tuberculosis and of bovine tuberculosis and also of human tuberculosis are merely varieties of a single microbian species, the tubercle bacillus.

THERE are announced two notable additions to horse show exhibitors. Mr. Clarence H. Mackey made his bow to the judges at the show in connection with the New York State Fair at Syracuse last month, and while his stable includes two park four-in-hands (one of English hackneys, the other of American trotters), together with several pairs and single horses, it is announced that he will assemble a large string of high steppers, which will be exhibited at the leading shows. The other recruit is Miss Rockefeller, daughter of Wm. Rockefeller, of Standard Oil fame. She will exhibit under the name of the Rockridge Farm.

SURGICAL ITEMS.

By Drs. Louis A. and Edward Merillat, Chicago, Ill.

IS THE DEATH RATE FROM ANÆSTHETICS IN DOMESTIC ANIMALS HIGH?

A year ago at the annual meeting of the American Veterinary Medical Association, speaking of the accidents of anæsthesia in animals, it was incidentally mentioned that the death rate is exceptionally high. An English veterinary surgeon, writing for the *Veterinary News* (London), vainly attempting to show the contrary, brands the assertion as an exemplification of discreditable ignorance. The unqualified accusation of ignorance will do no harm; it might even be true, but the claim that anæsthetics are harmless, that there is really no danger in them, and that veterinarians have but few deaths from their administration, is dangerous teaching, requiring the promptest refutation in the interest of those who might be misguided. The truth is that the death rate in animals is high, very high. In England it seems to be exceptionally high, for this critic tells us that *Dollar*, the leading English writer on surgery, *had two deaths in four hundred cases.* This is one death for every two hundred cases anæsthetized, a much higher rate than we American veterinarians have ever admitted. In view of the low death rate in human surgery (less than one in ten thousand), these figures alone prove pretty conclusively that animal anæsthetization has not reached the high degree of perfection that is often claimed by men who have accidentally anæsthetized a few animals without any casualities. Whenever the statistics run into the hundreds, the tell-tale results become evident—that is, the death rate is found to be *painfully high.* Our own statistics show a death rate of about one to eight hundred in horses and about one to three hundred in dogs. This, we admit, is too high, yet it is much lower than our critic's own figures. Handicapped by a dearth of reliable statistics, conservative writers on this subject have always remained non-committal so far as actual figures are concerned. The report of a few hundred cases always shows a high death rate. Reports on thousands of cases are wanting.

The low death rate in human surgery and the high rate in animal surgery points too plainly, too directly, to our inexperi-

ence as anæsthetists. In animal surgery everything is favorable for a low rate. Chronic alcoholism, cachexia, emaciation, general systemic weakness, morbid conditions of the heart, chronic disease of the lungs, serious capital operations of long duration, etc., constitute so many unfavorable conditions seldom ever encountered in veterinary surgical operations. Our operations are nearly all performed upon subjects in fair conditions of health, for local lesions that have not undermined the vital forces. Why then should *we* not be able to anæsthetize 10,000 subjects without a single death? Why are we content to boast that a certain veterinary surgeon has succeeded in anæsthetizing several hundred animals with only a loss of two? If the above presents are not the cause of the high death rate, what is, and if our death rate is not high, what constitutes a "high" rate, pray tell us?

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THE NEW HAVEN CLINIC.

At some future time the readers of the REVIEW will undoubtedly be given a detailed description of this last clinic of the American Veterinary Medical Association. It is only our purpose to mention in a general way that this feature of the New Haven meeting easily paralleled the other features. As compared with past clinics of the Association, it clearly exemplifies an onward trend. From the standpoint of interesting clinical subjects it could hardly have been improved. The facilities for operation and for observation were not as good as those provided at Cleveland in 1905, but, with the exception of the monstrous operating apparatus in the middle of the tent, they were all that could possibly be expected in a temporary out-of-door location. Credit is due the local committee of arrangements for having given their visitors a pretty lively, continuous, variety show, lasting many hours, each succeeding one more interesting than the other. White's work in securing the patients and Jewell's as the anæsthetist will long be remembered by those who recognize skill when they see it.

* * *

A COMMON ERROR IN NOMENCLATURE.

There seems to be a constant inclination to describe the *melanosis of white horses* under the name of *melano-sarcoma.* The name was used freely, and without comment from any one, at the last meeting of the American Veterinary Medical Associ-

ation. Melanotic growths are not sarcomatous, nor do they possess a single feature in common with sarcomas. A sarcoma, quite true, may sometimes be pigmented, like any other tissue, but the pigmented sarcoma (melano-sarcoma) and the deposition of melanin in the skin or other integuments of white horses are two distinct conditions. The melano-sarcoma is very, very rare in horses and they have no special dilection for horses of any particular color. They occur as real tumors stained, here and there or throughout, with a black or bluish pigment. There is no accumulation of melanin *en masse* as seen in the melanic growths of the white horse.

Melanosis of the white horse is strictly a benign condition, entirely compatible with health so long as they do not mechanically obstruct some vital organ. When removed, the wound promptly cicatrizes and there is no recurrence of the growth at the seat of ablation. The traumatic cavity produced by their ablation never fills with cells that fail to mature, as in the case of sarcomas.

The classification of melanosis of the white horse with the malignant growth seems to eminate from the human pathologist, from whom our instruction in pathology was largely received. Our teachers while dealing out what little knowledge of tumors they possessed, always referred to the melano-sarcoma in such a manner as to lead the veterinary student to suppose that white horse melanosis is a similar condition. While their cause is to us unknown, they are no more mysterious than the other tumors are to human pathologists.

* * *

A FEW SUGGESTIONS.

1. *In the treatment of retropharyngeal abscess*, complicating cases of distemper, early evacuation of the contents is advisable. There is always danger of suffocation before the surgeon can reach the patient if operative relief is delayed.

2. *In lancing deep abscesses* only the skin should be divided with a sharp instrument. The underlying structures should be separated with a blunt, probe-pointed instrument to avoid cutting large vessels whose locations are made uncertain by the changed physiognomy of the affected region. Senn always so admonished his students of human surgery.

3. *An abscess cavity is sometimes traversed with cord-like structures* consisting of tissues that have resisted the dissolving influence of abscess formation. Often these cords are blood-

vessels, which are capable of causing a troublesome if not profuse hæmorrhage when broken down with the fingers. Tampering with an abscess that is well evacuated is more liable to do harm than good. Even irrigation with antiseptics is of doubtful value, unless done moderately and unless all of the injected liquid is again drained or bailed out. Strong antiseptics, strong astringents, caustics or curettage will only retard cicatrization, and favor the spread of a new microbian inflammation into the surrounding tissues. A "ripe" abscess is a victory of the body over invading microbes. Meddlesome intervention may turn the victory into defeat.

4. *Abscesses proceeding from injured bone, cartilage or tendon*, or located adjacent to such structures, may continue to discharge after their contents have been evacuated. Under such circumstances surgical removal of the affected tissues is necessary to terminate the process. The fistula of the withers, poll-evil and quittor are examples of such phlegmons.

THE fight is on in Illinois for a graduate to fill the important office of State Veterinarian, so long held by one who has no qualifications for the position. The profession should not leave a stone unturned to drive the present incumbent out of a place that he never should have occupied.

THE "VALUE" OF VETERINARY PRESCRIPTIONS IN STOCK JOURNALS.—The following extract from a letter written by a subscriber to one of the leading live-stock weeklies is fairly illustrative of the value of veterinary prescriptions placed in the hands of laymen: "We have however in two cases been too confident in your replies to veterinary inquiries, the first in taking the afterbirth from a cow that pressed out her womb just after we were through with the operation. After considerable trouble we succeeded in getting it back again, but in a few hours the cow died. The second instance was that of a beautiful and valuable horse which became sweeneyed. In many numbers you have recommended injecting turpentine into the wasted parts with a hypodermic needle. This we did and if your veterinarian had seen the indescribable misery, pain and torture that poor animal was in for about 8 hours he would feel haunted as long as he lives. It makes me sick to think of it. So far the hores is alive yet, but it is the greatest wonder in the world. It was this morning when we treated him, or mistreated him, rightly said."

EXTRACTS FROM EXCHANGES.

GERMAN AND HUNGARIAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Washington, D. C.

IODINE POISONING [*Schuester*].—A bull at N. was affected with actinomycosis of the tongue, and was given the usual iodide of potassium treatment, 10.0 gm. per day. After the lapse of six days, (therefore, after the administration of 60.0 gm. of iodide of potassium), the owner came with the report, that the condition of the patient was more aggravated, the animal being swollen over the entire body, and could rise only with difficulty; also that there was considerable improvement in the mastication of food, and that the tongue had regained almost its normal size. On arrival, the author found the animal lying down, and only after considerable urging could he be induced to stand up. Over its entire body an eczema with marked scaling of the epidermis was noticeable. The hind extremities were greatly œdematous and swollen, deformed; also the scrotum, which hung down a considerable distance. From the eyes and nose a purulent discharge was coming. The appetite was almost entirely suppressed. The administration of iodide was discontinued, and internally frequently sodium subsulphate was given, which had been recently recommended for iodine poisoning; besides flour gruel was frequently given. The eczema was treated with antiseptic zinc ointment. The appetite returned on the following day; however, the eczema resisted the treatment for a longer time, especially at the swelling of the hind extremities and scrotum, where it remained for over three weeks, and then was followed by complete recovery.—*(Jahresber. bayer Thierärzte.)*

PSEUDO-LEUCÆMIA IN A HOG [*Gunther*].—The author observed pseudo-leucæmia in a hog, seven and one-half months old, which in spite of the consumption of large quantities of feed showed no gain in weight. For this reason it was slaughtered. Not possessing a counting apparatus, it was impossible for G. to establish the relation between the white and red corpuscles. In the enlarged liver three leucæmic tumors were found, which were of the size of walnuts, with slight hypertrophy of the portal glands; otherwise all organic and muscular lymph glands were normal, as well as the bone marrow, which

showed no abnormal consistency. The spleen showed marked changes. Its weight was 1925 gm., was 62 cm. long, 16 cm. wide, and 5 cm. thick. Both surfaces were vaulted, the borders thickened, the capsule also considerably thickened. The pulp was of a tough, hard consistence, of a raspberry color; cutting surface smooth; malpighian bodies greatly hyperplastic. —*(Deutsch. Thier. Woch., 1906, No. 10.)*

THE HISTOLOGICAL DIAGNOSIS OF RABIES [*F. Abba and A. Bormans*].—The authors were engaged in the work of determining the Negri bodies in the brain substance of suspected animals, principally to establish a simple method, which could be carried out by the practicing physician without any particular laboratory. The Ammons-horn is laid free, removed, sliced into small pieces, and kept in 4–5 c.c. of a 10 per cent. solution of osmic acid. Afterwards or necessarily later, the pieces are taken out and washed for half an hour in running water, then placed for three to four hours into absolute alcohol, and cut with a razor. Small cuts are sufficient: if necessary they may be squeezed under the cover glass. The preparate is brownish; the cells are plainly visible, with a pale nucleus, and a stronger stained nucleolus. The Negri bodies lie in the cells near the nucleus, and have a slight resemblance to the nucleolus; and on careful observation one can notice inside of them, bright uniformly located spots, somewhat like vacuoles. The size of these bodies varies, as well as their number. In some cases they may be present in every cell, in others they may be only isolated. In all 93 head of suspected rabid dogs were examined microscopically and experimentally; in 58 cases the results were positive, not only in the microscopic preparates, but also in the test inoculations. The authors state that in 3–4 per cent. of the cases of rabies the Negri bodies could not be found, and they emphasize, *that the negative results of the histological examinations should not be sufficient for a negative diagnosis of rabies;* in these cases test inoculations must be undertaken. The pieces of brain substance from rabid dogs treated with osmic acid proved to be completely changed. In test inoculations the Ammons-horn has not proved to be more virulent than other parts of the brain. The authors conclude that by the method of Volpino, a diagnosis of rabies can be made in less than 24 hours in more than 50 per cent. of the cases. In Turino test inoculations are made only in such cases when the microscopical examination for Negri bodies is negative. The method of Volpino (10 per cent. osmic acid) is preferred to the

more complicated method of Mann; a direct examination of the teazed brain substance in diluted acidic acid can only be of aid to a very experienced examiner.—*(An. de. l'Inst. Pasteur, 1905, No. I.)*

FRENCH REVIEW.

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

Violent Traumatism of the Flank in a Horse—Double Complete Laceration of the Small Intestine—Expulsion of the Ruptured Portion During Life of Animal [*J. Darras*].—This case is peculiar because of its rarity. Called one day late in the evening to see a very old gelding which was reported as having colic, the author found himself in the presence of a subject in the agonies of death. The animal had worked all day, in good trim, said the driver, although he had been brutally thrown down on the right side by another vehicle running into him. Three hours after receiving the blow the horse had shown violent colicky pains, became tympanitic and then suddenly with a violent effort expelled a loop of intestine through the anus. When D. arrived the animal was standing, covered with cold sweat, shaking in his legs, and with an imperceptible pulse. The portion of intestine which had been expelled was the floating colon; it measured three meters in length, and a portion of the mesentery was still attached to it. The horse died after two hours' suffering. At the post-mortem no indication of traumatism was found except a long laceration of the rectum, through which the expulsion of the intestine took place.—*(Record de. Médecine Vétérinaire)*. [It is strange that no lesion of the intestine was found at the points where the double rupture occurred.—Editor].

Paralysis of the Lower Jaw, Not of Rabid Nature, in the Dog [*M. Dauphin*].—Can any unsatisfied heat condition in bitches have nervous reflex influences on the apparition of this trouble? At any rate, the author narrates three cases where paralyzed lower jaws were observed in two bitches a short time after they had been in heat and had not been covered. A pointer, about seven years old, was the first to show it. The jaw was dropping and the saliva was escaping freely. The animal was gay, in good condition and willing, but unable to take milk, water or meat. The sensibility of the lower jaw

was gone; there was no stiffness in the movements. She was placed under observation. Another dog belonging to the same owner, a dachshunde, presented the same symptoms at about the same time. Although the owner feared rabies, and wanted the animals destroyed, D. insisted upon keeping them a few days under observation, as after that length of time general paralysis will show itself if the dogs are affected with dumb rabies. Instead of that, the dachshunde began to improve and gradually got entirely well. The pointer also made a good recovery, but required a longer time. The third case was a bull bitch which did not present nervous symptoms of the jaw, but became entirely blind about the time she would have had pups if she had been covered. This last case recovered in about two weeks.—*(Record de Médecine Vétérinaire.)*

MUSCULAR RUPTURES IN HORSES [*P. Leblanc*].—Results of violent efforts or of traumatisms, they sometimes occur also by simple localized muscular contractions, as proved by the following case: A horse operated upon for deep punctured wound of the foot is afterwards placed in slings. For a few days he bears them well, but after six days he hangs in them, and it is necessary to let him down. During the night he struggled terribly, made several vain efforts to get up, and when he was raised in the morning with pulleys an enormous swelling was observed on the left croup, extending forward to the sacrum, deforming the whole region, covering the ischium, and passing to the opposite side. The anus was pushed backwards. This swelling was hard, firm, and sub-aponeurotic. No bony projection of the coxo-femoral can be felt. But a large hæmatoma could be felt in the pelvic cavity. At the post-mortem unsuspected lesions were found. There was no fracture nor any articular lesion. The subcutaneous tissue was infiltrated and also the gluteal muscles. The important lesion was on the semi-membranosus and semi-tendinosus muscles, which were almost completely ruptured between the tuberosity of the ischium and the coxo-femoral joint. There was a large hæmatoma, intra- and extra-muscular, which was formed of blackish bloody clots, prune-juice color. The bloodvessels were thrombosed, and the ischiatic nerves were englobed in the bloody tumor.—*(Journal de Zoötechnie.)*

REDUCTION OF THE TORSION OF THE STOMACH IN DOGS [*Prof. Cadeac*].—Nothing is so easy as giving the theoretical rules of an operation that one has not to perform. This is said by the author, who alludes to the indications he has given in

his "Traité de Pathologie Interne," and as evidence records the following case: He receives the information that a splendid St. Bernard bitch is sick since morning. She is lying down, has great dyspnœa, increasing tympanites; no nausea, no vomiting, no defecation. She will probably die during the night. The idea of a torsion of the stomach is suspected; indeed, the enormous tympanites is characteristic. An operation is urgent or death by suffocation will certainly follow in a short time. After shaving and disinfecting the abdominal region, the stomach is immediately punctured and the abdominal wall is incised in the right flank, when a loop of small intestine, ten centimetres long, inflated and congested, bulges out. This is also punctured, and the punctures are repeated here and there on the dilated loops of the organ. The hand is introduced into the abdomen and comes in contact with a pregnant uterus. The posterior face of the liver and the terminal end of the œsophagus are felt for, but cannot be reached. Then moderate tractions are made upon the small intestine, which is then pulled backwards as far as possible. Attempts are made to pull the stomach gently backwards to see the result of the manipulations. Nothing can be made out, and whether they have been beneficial or disastrous cannot be told. It is useless to go further. The animal is considered as lost. However, a bandage and a dressing are applied around the abdominal cavity. The bitch is then carefully carried to her kennel, but as she was very heavy it was at one moment necessary to lay her on the ground, when of a sudden *she arose and jumped over the fence of her kennel.* She was saved, and a few weeks later gave birth to her puppies. Conclusion: "When in the presence of an animal affected with torsion of the stomach, prevent asphyxia with a puncture, open the abdomen as for castration on the right side, pull on the small intestine little by little until reaching the stomach, and so carry the abdominal organs, and the chances to save the patient will be very great."—*(Journal de Zoötechnie).* [Why not open the abdomen on the median line?—EDITOR.]

A RATHER INFREQUENT CAUSE OF INTESTINAL OCCLUSION IN CATTLE [*G. Parant*].—Various are the causes of this trouble, but the one found at the post-mortem of this steer has probably been observed for the first time. Sept. 10 he was, after work, taken suddenly with very violent colic. It lasted several hours, and passed away as suddenly as it came. Since that day he remains continuously lying down as if paralyzed,

and refuses all food, solid or liquid. There is no defecation. The pulse is quick and thready. He does not answer to excitement to get up, and remains lying. His legs are not paralyzed. Rectum is empty. Pressure of the right flank made with the hand during rectal exploration reveals a slight soreness. 100 grammes of aloes are prescribed; no result. The animal is slaughtered the next day. At the post-mortem a portion of the small intestine is found much congested. Two intestinal loops, about 50–60 centimetres long, are tied together at their base by a round white cord, stretched in the abdomen and as large as a pencil. This cord makes only one turn around the two strangulated circumvolutions of the intestines, where already slight signs of gangrene are manifest. The cord is inserted at one end in the *cul-de-sac* of the bladder and by the other extremity at the umbilicus. It is the urachus. The bladder, instead of being globular, and round at the anterior part, as it is in the normal condition, has the aspect of that of the fœtus, viz., ovoid and fusiform at both ends. When it is opened the canal of the urachus is still open. The animal made water in a normal condition; the umbilicus was well closed, and there was no urinary fistula.—*(Revue Generale de Médecine Vétérinaire.)*

Sarcoma of the Right Olfactory Lobe in a Dog [*Marchand, Petit and Coquot*].—A common dog, aged 12 years, has epileptiform attacks since a few days, and its owner wishes him destroyed. Placed under observation, he presents the following symptoms: in a state of stupor, he remains entirely indifferent to all kinds of excitation. His walk is stiff and hesitating. He goes straight in front of him until he meets an obstacle, which he is not cognizant of. He stumbles against it, and remains for an indefinite time completely immobile, in the same position he assumed when he stopped. Often the front legs given away under him. He carries the head always low. In his kennel he puts his nose in the food bowl or under the straw and remains in that position indefinitely. Ocular reflexes still exist. Right eye much retracted in the orbit and turned upwards and inwards. He takes willingly and swallows the meat that is offered him. Skin is cool, with sensibility diminished. There are two cutaneous tumors, one on the poll, the other on the sheath. The diagnosis was reserved. At the post-mortem all the organs of the splanchnic cavities are found healthy with the exception of slight lesions of chronic nephritis and of the mitral valves. On removing the brain it is observed that the right olfactory lobe is very large, deformed, and in-

vaded by a tumor, which is attached to the ethmoid bone so intimately that a chisel is required to remove the ethmoidal volutes with the brain. The left olfactory lobe is sound. The tumor was pressing upon the right lobe. It measured five centimetres in length, three in width, and was localized only on the olfactory lobe. Histological examination of the tumor and of the two cutaneous ones, which had been saved, proved them to be of the same structure—globo-cellular sarcoma.—*(Record de Médecine Vétérinaire.)*

FIBRO-SARCOMAS OF THE EYE-LIDS (HORSE)—PARTIAL REMOVAL—RELAPSE—COMPLETE AND RADICAL CURE WITH JOUANIN OINTMENT * [*L. Dupas*].—In November, 1904, a seven-year-old mare had on the eye-lids of the left eye round, elevated, hard and painless nodosities, which were slightly adherent to the skin. They had been growing there for eight months. Two larger and more important ones were situated on the extremities of the palpebral slit at the nasal angle. They were as large as a hazel-nut, one above the other, and as they interfered with the sight it was decided to remove them. The operation was performed with the animal cast and cocained, the two larger growths and one smaller one being carefully dissected out. The wound left was rather anfractuous, but could be closed with eight stitches. Examined under the microscope, the neoplasms proved to be fibro-sarcomas. To a certain extent they were liable to return. Up to December 3 everything went on well and the animal was discharged. But from this day the cicatrizing process stopped. The granulations returned; they increased, spread and soon were very large. Excision, cauterization even with the red-hot iron—all failed. It was then that the ointment was resorted to. On January 11, a first application was made, and twenty-four hours later there was slight improvement. Two days later the application was made twice a day. In less than three weeks all suppuration had stopped, the granulations were reducing, gradually retracting, diminishing, and at the end of a month's treatment recovery was complete. And not only was the success great on these returned growths, but also on the other smaller tumors; they softened, melted away, and progressively disappeared in such a manner that it was absolutely impossible to suspect they had ever existed.—*(Record de Médecine Vétérinaire.)*

* This Jouanin ointment is made of: honey 240 grammes, subacetate of copper 80, Goulard's extract 40. Mix and heat the honey and copper until the mixture is red brown, add the extract, and keep heating until the mixture has a syrupy consistency.

TOTAL HYSTERECTOMY IN A BITCH—RAPID RECOVERY [*M. Chanier*].—A St. Germain bitch, aged eight years, is dull and refuses her food. She has a painless tumor in the left groin for the past three weeks. It is the size of a child's head. From the vulva escapes grayish, fœtid pus; mammæ are slightly swollen; a few drops of milk ooze from the teats. The bitch was covered two months and a half ago, and has never shown any signs of pregnancy. A diagnosis of inguinal hernia is made and an operation proposed, viz., opening of the sac and see what the indications may be. This was consented to, and, after all antiseptic precautions, carried out in three steps. First step: Incision of skin, enucleation of sac, opening of the sac, exposure of the uterus in ectopia; it is the seat of suppurative metritis, this condition due to the presence of dead fœtuses existing in both horns; total hysterectomy is decided upon. Second step: Ligature with strong catgut of both horns, as near to the ovaries as possible (these being preserved), ligature on the vagina immediately back of the uterine neck, ligature of the arteries, section of the uterine ligament, excision of the mass between the ligatures. Third step: Antiseptic washing of the vagina, free irrigation with boiled water over the wound, silk suture of the skin, wadding dressing and bandage. The operation lasted forty-five minutes. Cocaine only was resorted to. The sequelæ were of no special interest. There was but little suppuration at two or three of the stitches nearest to the vulva, but in ten days the dog was almost entirely well. She has been in heat since, her ovaries having kept their ovagenesic function (?) without any inconvenience to herself. Ovaries can therefore be left untouched in hysterectomy, thus avoiding the organic perturbation consequent upon ovariotomy.—*(Revue Generale de Médecine Vétérinaire.)*

THE FISS, DOERR & CARROLL HORSE COMPANY, which is erecting the largest and finest building devoted to the stabling and selling of horses in the world, on 24th Street, New York City, will open as an adjunct to their great business a Horseman's Bank. It is said that the fittings of this bank will be unsurpassed by any similar institution in New York. Mr. Frederick Wagner, President of the company, was founder and former President of the Union Square Bank, and Mr. Joseph D. Carroll is a director of the New Amsterdam National Bank. The new stable is ten stories high, with hospital on the top floor, and with a roof garden for convalescent exercise.

BIBLIOGRAPHY.

A TREATISE ON SURGICAL THERAPEUTICS OF DOMESTIC ANIMALS. By P. J. Cadiot, Prof., and J. Almy, Adjunct in the Veterinary School at Alfort. Translated by A. Liautard, M. D., V. M. New York: Wm. R. Jenkins, 851-853 Sixth Avenue, 1906.

When the *Traité de Thérapeutique Gérérale Vétérinaire* of Prof. Cadiot was issued some time ago Prof. Liautard felt that such a valuable work should not be lost to the American veterinarians, who, in the main, do not read French. Consequently he secured permission from the author to translate the work, and incidentally to add some American notes, in the hope, not only of rendering the book more acceptable to his readers, but to give credit for many contributions to surgical therapeutics by American surgeons and which have not been preserved in systematic form.

The field of surgical therapeutics has been thoroughly included, and it is probably the best exhibition of the subject in our language. The great pains taken by the translator would have been less open to criticism if he had employed a competent English reviser to smooth off the sentences and reduce some of the French phraseology into well-understood modern English diction, for at several points the reader is confused by the attempt to compel a French word to do duty in a foreign tongue, while in many places there is evidence of a lack of scientific proof-reading. But these little irregularities do not detract from the great value of the treatise as a scientific exposition of the subject, and all Americans must feel pride in the author's display of justice in bringing them forward in company with the surgical achievements of other lands.

The work is comprised in a volume of nearly six hundred large pages, profusely though not elegantly illustrated, there being 118 cuts, well depicting the descriptions, those upon the restraint of animals being very comprehensive. It is divided into three parts, Part I. embracing General Surgery:—Means of restraint of animals, general anæsthesia, local anæsthesia, surgical antisepsis and asepsis, hæmostasis, cauterization-firing; Part II.—Diseases Common to all Tissues:—Inflammation, abscess, gangrene, ulcers, fistula, foreign bodies, traumatic lesions, complications of traumatic lesions, granulations, virulent diseases, tumors; Part III.—Diseases Special to all Tissues and Affections of the Extremities:—Diseases of the skin and cellular tissue, of serous bursæ, of muscles, of tendons, of tendinous

synovial sacs, of aponeurosis, of arteries, of veins, of lymphatics, of nerves, and finally of bones.

To the practitioner it is an authoritative reference work, and can be profitably consulted whenever surgical cases are to be undertaken or where complications arise to perplex the surgeon.

The book can be obtained from the well-known veterinary publishing house of W. R. Jenkins; price, $4.50. (R. R. B.)

BOOK OF VETERINARY DOSES, THERAPEUTIC TERMS AND PRESCRIPTION WRITING. By Pierre A. Fish, D. Sc., D. V. M., Professor of Veterinary Physiology and Pharmacology, New York State Veterinary College, Cornell University. Second Edition, revised and enlarged. Published by Taylor & Carpenter, Ithaca, N. Y., 1906. Pp. 173, $1.00.

We congratulate the author on the success which we predicted would follow the publication of this work a year ago so that as early as this there is a call for a second edition, revised and enlarged, now published. Two important improvements have been made in the new edition: the author, so far as veterinary remedies go, has made use of the changes recommended in the latest U. S. Pharmacopœia which became official Sept. 1, 1905; besides, he has recast his chapter on prescription writing and amplified it. The success which the book has met will thus be enhanced. For the adoption of the changes suggested in the National Formulary will make it far more serviceable for our host of practitioners; while the matter on prescription writing can now be more easily assimilated by students of dosage in our growing veterinary schools. The changes make this little pocket book more practical for practical men and simpler—if a book which is simplicity itself, can be so made. (D. A. H.)

AN ADVERTISING VETERINARIAN is organizing a national association of kindred spirits at Washington, D. C. Is it not a sickening and disgusting exhibition of atavism when the *men* of the profession are struggling to discourage such quackism that there can be others found to directly champion it?

"CATTLE FEEDING EXPERIMENTS" is the subject of Bulletin No. 93 of the Nebraska Agricultural Experiment Station, by H. R. Smith. The Experiment Station of Louisiana has issued as Bulletin No. 86, a consideration of "Our Available Stock Foods," by Dr. W. H. Dalrymple, and as is characteristic of this author, it is a thorough and scientific exposition of the subject. The veterinary student will find much information concerning the scientific balancing of nutritive rations in this very practical pamphlet.

CORRESPONDENCE.

DR. WYMAN DISCOURSES ON SOME PRACTICAL TOPICS: PARTURIENT PARESIS—OPERATING TABLES—POWER FLOATS.

COVINGTON, KY., July 1, 1906.

Editors American Veterinary Review:

DEAR SIRS:—Dr. E. A. Van Antwerp's report on irregular parturient paresis ends with a query. A cow either has parturient paresis or she has not. Some years ago the writer, while advocating the injections of a normal saline solution in preference to potassium iodide or oxygen or air, went into details as to what constitutes parturient paresis. To simply touch upon it here briefly. The examination of the discharge about the os uteri is a very important means to settle the prognosis and diagnosis of that disease, giving of course due consideration to other symptoms present. A great deal of interesting and instructive work along this line has been done by De Bruin and other European veterinary scientists; and the gist of their exhaustive studies shows plainly that a number of other diseases closely resembling parturient paresis exist, which are benefited by the udder treatment. The writer long ago has ceased to call a case parturient paresis (at least in my personal records) because an udder injection cured the animal.

Apropos of Dr. Warren's report on quittor. An operating table is all right in its place. Merillat in the May number of the REVIEW hits it beautifully. The writer had an operating table, in fact the first one of its kind in the United States, a table very similar to the one now advertised in the REVIEW. In my work "Catechism of Veterinary Surgery," I dissected that table—perhaps I did use the big stick too freely; to judge by the way my English *confrère* and critic jumped on me, I am inclined to believe that somebody over there got hit by the stone which was thrown and—yelped. The ropes will always be the main means of restraint of the majority of veterinarians, and quittor operations are at certain seasons weekly, and often daily occurrences, the animal being handled with ropes. Colleges ought to have such appliances, as the student should gather positive knowledge at his *alma mater*. I think the manufacturers of the various tables would do well to put their operating tables at the disposition of college authorities; in that way their claims can be substantiated.

Talking about claims, reminds me of several power floats

that are now offered to the profession—two of them the writer has tried and returned, the third is in use now, a Western invention, and so far leads, being really practical. The writer will have more to say in the near future on power floats and the experience he has had with them. W. E. A. WYMAN.

POOR RESULTS FROM THE LATEST OPERATION FOR CHOKE.

EL PASO, TEXAS, September 20th, 1906.

Editors American Veterinary Review:

DEAR SIRS:—Commenting on your note appended to my report of a case of choke showing rupture of the heart on post-mortem examination, I desire to state that the operation which you refer to was performed on two occasions at this hospital with most unsatisfactory results.

The technique was carried out conscientiously and in detail under the customary precautions and in each instance the patient died, apparently from collapse.

With this experience in mind I had no desire to repeat the operation. Respectfully yours,

MARTIN R. STEFFEN, M. D. C.

ARMY VETERINARY DEPARTMENT.

ARMY VETERINARY NOTES.

DR. L. B. HUFF has been transferred from Fort McKinley, Philippine Islands, to St. Joseph, Mo.

DR. CHARLES H. JEWELL, Fort Riley, Kansas, has been transferred from the Cavalry to the Artillery Corps.

DR. OLOF SCHWARZKOPF, writing from Camp Statsenburg, Philippines, under date of July 15, says that both he and Madam S. are enjoying splendid health, but that he is greatly overworked, owing to the resignation of his Junior, Dr. Rapp. He also states that he has collected considerable material for this department, which will be sent in shortly.

A LARGE "BEAN."—Dr. W. O. Kemp, Key West, Fla., has forwarded to the REVIEW a dried concretion taken from the fossa navicularis of a bay horse, 12 years old, which had great difficulty in micturating. The "bean" measured one and a half inches in length, one and a quarter inches in width, and one inch in thickness.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The seventeenth annual meeting of this organization occurred on Sept. 11, 12 and 13, at Buffalo. The first session was called to order at 11 A. M. Sept. 11th, in the assembly room of the Genesee Hotel, by President W. L. Williams, and the room was about half filled with members and guests, there being a few ladies present. After opening the meeting, the President introduced the Acting Mayor of Buffalo, who welcomed the State Association to the city in felicitous words, to which Dr. Roscoe R. Bell responded on behalf of the Association.

President Williams then delivered the annual address as follows:

PRESIDENT WILLIAMS' ADDRESS.

"*Fellow-members:*

"At our last annual meeting, in conflict with my personal wishes, you saw fit to confer upon me the highest honor within your power. Personally I have long preferred the freedom of the floor to any office within the gift of any veterinary society and that my association activities should be upon the program rather than in administrative work.

"But you have seen fit to have me do otherwise and your action in electing me, a comparatively new member, to the presidency in so old an organization, which includes so many members of high repute in the state and nation, is a mark of esteem for which I wish to express to you my most sincere appreciation and at the same time to assure you that during my incumbency I shall do all in my power for the welfare of the society and profession. I can do little, however, without the hearty support of each of you, a support which you have generously given thus far and upon which I hopefully count for the remainder of my term of office.

"The constitution makes it a part of my duty to submit at this time an annual address upon the state of the profession in New York and to offer such suggestions as I may for its betterment.

"The State Society meets to-day under the most prosperous conditions of recent years. On the whole, the year has been one of success and encouragement to the veterinarian, the membership of the Society has materially increased, and

for the first time in ten years we open a meeting with all financial obligations of the Society fully liquidated and a handsome balance of cash in the treasury.

"The meetings of the Society for a number of years were apparently of so little value to the members who attended that the numbers at the annual meetings became very small. It seemed that the program offered was not of sufficient interest to appeal to the average veterinarian, and under these conditions it was easy for discontent to arise and the members to become indifferent, and when such conditions exist the finances of the Society suffer in the same proportion as the professional spirit.

"The recent growth and vigor of our Society has been due to the excellence of the programs which have been offered, making it worth while for a large number of veterinarians to attend our meetings and become actively identified with our work. Our conventions have even attracted marked attention from beyond the borders of New York, and we have been honored by the attendance of numerous veterinarians of high standing from other states.

"The future of our Society must depend upon a continuance of the spirit which has pervaded our membership during the past six or seven years. Each member needs to consider that the welfare of the Society depends in large measure upon his individual support. There is no man in our Society who cannot add in some way to the value of our program. Each practitioner has cases and experiences which are capable of teaching lessons to the others and a report of these by the weakest member is of value to himself and to the entire Society. A good veterinary meeting consists of an extensive program appealing to personal experience and the avoidance, as far as possible, of other affairs. We are happy to be able to offer to-day as rich a program as has been secured for any meeting in the history of our organization, preëminent among the papers being those of Prof. Law and Dr. Ackerman upon the subject of 'Veterinary Education in the State of New York,' the one an accomplished scholar and educator, the other an equally accomplished private practitioner. Closely allied to the subject of education is the question of illegal veterinary practice in the state.

"Four years ago you directed the President to appoint a committee for the purpose of prosecuting illegal veterinary practitioners, and, our treasury being empty, voluntary contributions were made for the purpose of enabling the committee to carry on its work. Through the liberality of the members a

goodly sum was contributed and during the three following years this fund was virtually exhausted. Upon my election to the Presidency it seemed to be my duty under the resolutions of the Society to continue this committee, but there was no money with which it could accomplish any work requiring expenditure, and there was apparently no proper way in which to procure funds for the purpose. After due consideration, the President of the State Board of Veterinary Examiners was made chairman of that committee, and the Secretary of the Society, Secretary of it, and the number completed by retaining Dr. Stebbins, who had previously served as a member. This committee will report to you its actions during the year, with such recommendations as may seem to it appropriate. The question of our attitude toward illegal practitioners in the State of New York is an exceedingly complex one. There are so many ways in which one may violate the practice laws of the state, either in letter or in spirit, and there are so many acts which stand upon the border line between legal and illegal practice that before any very definite action can be taken the members of this organization and the legal practitioners of the state should reach some reasonably unanimous conclusion as to what constitutes illegal practice and how far prosecution should be carried. We may divide the alleged violators of the veterinary practice laws in New York into the following classes:

"I. Veterinary graduates ineligible to take the state license examination and practicing in open defiance of the law.

"II. Veterinary graduates of the same educational qualifications as Class I, practicing as 'Manager' or 'Assistant' under the name of a licensed veterinarian but outside his territory or actual supervision and probably paying tribute to the licensed protector.

"III. Veterinary graduates of the same qualifications as Class I, directly employed by licensed practitioners as assistants at a salary and performing all the functions of a qualified veterinarian, including the making of calls and prescribing.

"IV Non-graduates, such as stablemen, employed by licensed veterinarians, sent out to perform the ordinary duties devolving upon veterinarians, making calls, examinations and prescribing.

"V. Veterinary graduates eligible to enter the examinations of the Board, and who have taken them, but enter upon practice before receiving the state license or having official information that they have succeeded in passing.

"VI. Undergraduate students working for a nominal sum during vacation under a practitioner, who introduces them as 'Doctor' to his clients and sends them out to answer general calls and perform the functions of a veterinarian without immediate supervision.

"Class I is generally composed of inferior men who are not generally prosperous, cannot collect accounts by law and are greatly hampered. If pressed they can hunt cover under Class II or III. It is a numerous class, constantly on the increase.

"Class II is not extensive and they are generally under the protection of prosperous and influential practitioners.

"Class III is more extensive. They make good assistants because they cannot leave their employer and start up in legal opposition to him.

"Class V is mostly made up of recent graduates and the practice is quite common with them. Usually they pass the Board test and are licensed within 60 days after taking the examination.

"I do not know how extensive Class VI may be, but it exists to some extent among students.

"I cannot see that one is more an evasion of the law than another. Which of these groups shall we attempt to prosecute? Another question of importance should first be answered.

"What is our motive in prosecuting an illegal practitioner? Two answers may be given.

"I. The protection of the veterinary profession.

"II. The protection of live-stock interests.

"Our attitude in prosecuting will vary according to which of these answers is accepted. There is a general sentiment against class legislation and in favor of affording support, encouragement and protection to valued interests or industries.

"We do not believe that the profession in and for itself has any claim to protection, but that the reason for legislation regarding the veterinary practice must be based primarily upon the question of improving the veterinary service to the live-stock owners. If this be accepted as our answer, then the prosecution of illegal practitioners needs be based upon the betterment of veterinary service. We recognize three chief ways by which this end may be attained.

"I. Increasing the efficiency of existing practitioners.

"II. Supplanting inferior practitioners by veterinarians of a higher order.

"III. Increasing the number of efficient practitioners.

"Legal enactments can exert but little direct influence upon the improvement of existing practitioners; whatever progress they are to make must be chiefly through study in their practice, through veterinary journals or in veterinary societies. We are thus left to consider the enforcement of legal enactments in relation to their power to supplant inferior by more efficient men and by increasing the number of practitioners.

"If we successfully prosecute a man for illegal practice and force him to withdraw, can we fill the vacancy with a better man? Take a concrete example well known to us. A thrifty hamlet of 6,000 or more persons, with a good agricultural community surrounding, has one licensed non-graduate and one unlicensed graduate. The latter is apparently honest, clean, has some competency and apparently renders some service. A successful prosecution of this man would leave the community wholly reliant upon the aged non-graduate who has a license and no available licensed graduate nearer than 12 or 15 miles, with questionable improvement in efficiency. But the distance at which a veterinarian can render efficient service is limited by the value of the animal and the urgency of the case. In many cases a disease will have passed its crisis before the veterinarian 15 miles distant can reach the scene. But in the community to which I refer, a large proportion of the animals do not exceed $50 per capita in value, and a veterinarian can ill be afforded for attendance unless the value of the patient equals at least $5 for each mile traveled by the practitioner, so that in case of a $50 animal a ten mile call would be about the maximum. Rural veterinary service constantly labors under the disadvantage of high cost to the owner and low fees to the practitioner. If a $50 animal is attended at a distance of ten miles for $5, the fee represents 10 per cent. of the animal's value for a single call, which is high for the owner and is yet low for the practitioner. These agricultural communities, despite the low value of their live-stock in some cases, need and deserve adequate veterinary service, and we can not well insist upon driving out an efficient practitioner except we can replace him with a competent one.

"In order to answer this question advisedly we must look to the State Veterinary Examining Board and learn what it is doing in supplying the requisite number of licenses; and it in turn is dependent upon the teaching schools.

"During the first nine years of the Board (we have not

included the tenth year because the statistics are not fully available) there were licensed according to the official reports of the University of the State of New York, 124 veterinarians upon examination, eleven of whom had graduated prior to the formation of the Board.

"Of the 124 licensees, 42 are not in practice in the state, 39 having gone into other lines of veterinary work or other pursuits, one of whom died after leaving practice, and three who are in practice have located outside the state. Seventy-two are apparently now in practice in the state, an average of 8 licensees for each year of existence of the Board. The present address and avocation of 10 licensees is undetermined, and if they are all in practice, which is scarcely possible, the average would be raised to $9\frac{1}{10}$ per annum.

"Former Secretary Morris, of this Society, published in 1897 a list of 639 graduate veterinarians licensed and registered to practice in the state.

"If we assume that the active life of a veterinarian be 20 years, then it would be necessary to license 31 veterinarians per annum in order to keep the numbers intact, but instead we have licensed less than 14 per annum and a large proportion of these had no intention of entering practice at the time of taking the examination, and many others abandoned it in less than a year.

"Our basis for estimating the needs may be wrong. The announcement of the New York State Veterinary College for 1906–07 offers a wholly different calculation. It estimates the number of practitioners in the state as 2,000, and the active life of a veterinarian at 30 years, and by this computation gives the required number of licensees at 66 per annum or makes the need more than double our estimate.

"It must be evident, although our statistics are not exact, no difference upon what basis estimates rest, that we are not replacing those veterinarians who are dropping out of the ranks by removal, retirement, and death, wholly with licensed veterinarians, but in order to fully restore the numbers must draw upon unlicensed or illegal men.

"Nor is the prospect for the immediate future any better. More men graduated from the teaching colleges of the state during this than in any prior year of the existence of the Board, but they are not yet definitely settled and the indications are that less than 10 of them will be in practice in the state one year hence. Next vear will afford a large class of graduates, but there is no assurance of getting out of the number many more

practitioners for the state, and with this class the teaching colleges reach their zenith for some years to come under the present conditions, and in the following year there will be a severe decline in the licensees. The profession has held up well in its numbers thus far, because at the beginning of our present law young men constituted the great mass of practitioners, and so far as we know only one man licensed by the Board upon examination has thus far died and he had not really entered into practice but took up meat inspection soon after graduation. It should be noted that the New York colleges must furnish the licensees, as is shown by the records of the past nine years. During that time, according to the official reports of the College Department of the University of the State of New York, licenses have been issued upon examination to graduates of the various colleges as follows:

"Total licensees 1897–1905	124	
"Graduated prior to 1897	11	
"Graduated during existence of Board		113
"New York State Veterinary College	77	
"New York–American (including New York College of Veterinary Surgeons and American Veterinary College)	38	
"Montreal V. C. and McGill University	3	
"Pennsylvania	2	
"Chicago Veterinary College	3	
		113

"We thus find that of the veterinarians graduating since 1896 and becoming licensed to practice in New York, 105 come from schools within the state and 8, or less than one per annum, from outside colleges.

"We are consequently placed face to face with the problem of prosecuting illegal veterinary practitioners without being at all able to supply an adequate number of legal veterinarians.

"If that difficulty were safely passed we would next have to deal with the question of what constitutes illegal practice. We would perhaps all agree that our Class I, consisting of graduates unqualified for the license examination and practicing upon their own account, are clearly in conflict with the law and open to prosecution. On the other hand, we would not be so unanimous about Class III, in which a non-licensed man is acting as assistant to a licensed practitioner, occupies the same

office and works under the licentiate at a fixed salary. He goes out to make calls, examines cases, performs surgical operations, prescribes and performs all the offices of a veterinarian, in the name of and for his employer. If this is a violation of the law, who is the violator—the principal, who is licensed, or the assistant, who is not?

"Between Classes I and III there comes Class II, where an unlicensed man maintains a separate office in the name of a licensed principal, perhaps some miles distant. If Class III is legal, what of Class II? If it is legal for an unlicensed assistant to practice while making his office with the principal, we see no objections to his doing the same kind of practice from a separate or second office. Many practitioners have each two or three offices and take calls from each. And if any one of the three classes is legal, then any unlicensed man may find cover therein. There are plenty of licensed non-graduates under whose protection the unlicensed graduate can hide for a nominal sum if that be legal. If these can safely hide under cover of a licensed practitioner as his assistant, then probably the unlicensed groom in the veterinarian's stable, constituting our Class IV, can also be protected from the operation of the law.

"Probably most of you will say that in our Class V, consisting of graduates eligible to take the license examination, or who have taken it but have not yet received a license and proceed to practice, are merely violating the law technically. But if such a man fail in but one subject, not fundamental, and he elects to continue in practice until another examination date gives him a second opportunity, is he then in actual violation of the law? If this is a violation in one case, why not in the other?

"Our Class VI, that of undergraduate students going out with a licensee during the summer vacation, is a very important legal question. Teachers advise students to seize such opportunities, but we all know well enough that in many cases they are sent out on calls, examine patients, prescribe, operate, and not infrequently the licensee introduces the student as 'Doctor', his assistant, and leaves him in charge of the practice during his absence on a vacation. Sometimes he introduces the student as such, but with the remark, 'he can serve you just as well as I,' in which case why should the student continue to take further work in college? If a competent veterinarian, why not graduate and license him without further parley?

"If you agree that the members of each of these classes con-

stitute violators of the law, I believe you would at once admit that a President has a difficult task in finding a prosecuting committee, some member of which is not in some way involved in an infraction of the law, though so far as we know we have succeeded in this respect.

"The serious aspect of the question is that if all these classes are considered as illegal, and I can take no other view, the violators of the law are so numerous that successful prosecution by the Society is virtually impossible, because so many of its members are themselves involved, so few without sin who are in a position to cast the first stone.

"A further very important question which has arisen in reference to the prosecution of illegal practitioners is the apparent inefficiency of the law after conviction.

"One of our earnest local societies undertook some extended investigations with a view to wholesale prosecutions, and upon submitting the law to an able attorney found to their astonishment that while a non-graduate practitioner might be fined $250 to $500 and be imprisoned, the illegal graduate practitioner could be fined but $50, and the collection of this could not be enforced.

"It has been our policy to leave each committee perfectly free to do its work as it saw fit, but under the foregoing conditions, when our advice has been asked by the Prosecuting Committee, we have not urged legal action, but rather a careful study of conditions as they exist and then await your definite instructions. We have thus attempted to present to you openly, frankly, fully, the obstacles before us as we see them in any attempt to enforce the law against illegal veterinary practice. Statistics upon the question are sadly wanting, but two conclusions we believe are safe: 1st. Illegal veterinary practice in the state has been constantly on the increase since 1897, and, 2d, We probably have more illegal practitioners in New York than exist in any other state. In suggesting these conclusions it is to be borne in mind that the illegal practitioners of New York would be largely legal were they located in many other states of the Union. In scanning the commencement reports of outside colleges this year, we noted the names of 17 residents of New York among the graduates, few, if any, of whom could probably have matriculated in a New York school. We have not learned how many of these have returned to the state to enter into practice, but it is quite certain that nearly if not all of those who do so will necessarily violate our practice laws, as

they are not eligible to take the examination of the State Board.

"The important question which presents itself is what course shall we pursue? What is best for the live-stock interests of the state?

"We must look largely to the teaching schools to answer the question through the normal law of supply and demand.

"The next great point to be considered is, which of the classes named by us are to be considered as illegal and stopped by prosecution? In this matter effectiveness depends upon reasonable unanimity, and ere we can have this our members themselves must voluntarily put their own actions above criticism.

"The law, if not sufficiently explicit, and we believe it is not, should be so modified as to render its application practicable. It should especially clearly define what constitutes an infraction and provide an effective method for collecting fines after a conviction.

"The entire subject needs be considered by you carefully and judiciously and a definite plan of action determined upon. For the present it seems to us that one of the most important duties is the securing of statistics showing the number of graduates and non-graduates respectively who were licensed as existing practitioners, how many of these have since died, retired or removed from the state, to what extent these vacancies in the ranks have been filled by new licensees and how many have begun illegal practice in the state. With such data before us we will be enabled to measure the extent of our task. In all our consideration we must not fail to recognize that no law can well be expected to directly favor our profession. If each and every illegal practitioner was successfully prosecuted and placed in jail it would affect the professional or financial standing of but few legal veterinarians. A strong practitioner needs little or no protection by law. Without any legal favors he can have all the practice he can properly do and practice laws become to him a professional sentiment.

"The weak or inefficient practitioner cannot have his practice materially enhanced by any legal enactment. Other practitioners may be excluded, but no live-stock owner can be compelled to submit his diseased animals to an unacceptable practitioner be he ever so legal.

"The protection of the individual practitioner is not in the law but in himself. He needs to see that his work is made better and better each year, he must study each case, he must

counsel with his colleagues, he needs to study constantly and carefully our standard and current literature, attend and participate in our association meetings and bring his practice up to the highest possible plane; then illegal and inefficient men can hurt him but little.

"In spite of the disadvantages recounted above we feel that there is good ground for taking a hopeful if not optimistic view of the situation.

"It is a great gain to have clearly defined legalized academic and technical attainments, accompanied by the greatest security as to personal character that law and education can afford, since this sets upon veterinary science a seal of dignity in the eyes of the law and the public.

"An illegal practitioner rests under a serious cloud, his clients know of his shortcomings and disrespect him; he cannot enforce the payment of a fee. If hiding under cover of an assistantship, he cannot command a full salary because he does not possess the independence to establish a legal practice himself in case of dissatisfaction and so must submit to the possible galling dictation of his principal, and in case of the latter's death, retirement or removal, he is out of employment and legal opportunity.

"If, in addition, the teaching schools come forward with a sufficient supply of practitioners of a high grade, we may safely trust to the future the solution of the problem of legal veterinary practice in New York and rest assured that we shall have an efficient and dignified profession in harmony with the demands of our agricultural, live-stock and public health interests and our highest professional ideals."*

The Secretary then read the minutes of the meeting of 1905, and, after a single correction, or addition, they were approved.

THE ATTENDANCE.

The calling of the roll was dispensed with, and the Secretary was directed to obtain a list of those in attendance by means of a book of registration, passed around the room, as has been done in previous years. While this system has always failed to secure a complete registry of all in attendance, it was a greater failure at Buffalo than ever before, and we would suggest that the

* It appears that some hearers misinterpreted the statistics which appear in this address as indicating the President's opposition to the present requirements of admission in the veterinary colleges in the State of New York, but such is not the case, as President Williams states that he is heartily in favor of maintaining the present standards for admission.

Society adopt some other means of securing the names of members and visitors attending the meetings. The system adopted by the A. V. M. A. is much better. It places a member of the local committee at the door of the hall, and keeps him there during the entire meeting; every person entering the hall must secure a badge, and in order to get this must sign a card, with his name, degree and address. At New Haven red cards were used by members, yellow by visiting veterinarians, white for ladies and lay visitors. This year it appears to us that the names of not more than three-quarters of those in attendance were placed upon the registry, which were as follows:

George H. Berns, Brooklyn; Carr R. Webber, Rochester; Claude D. Morris, Binghamton; W. G. Hollingworth, Utica; E. B. Ackerman, Brooklyn; P. J. Axtell, Deposit; W. H. Pfyfe, Millerton; E. J. Nesbitt, Poughkeepsie; Roscoe R. Bell, Brooklyn; J. W. Corrigan, Batavia; C. E. Clayton, N. Y. City; D. W. Cochran, N. Y. City; Chas. J. Miller, Ithaca; W. N. D. Bird, Buffalo; P. A. Fish, Ithaca; G. S. Hopkins, Ithaca; Frank Hunt, Jamestown; F. G. Shepard, Gowanda; Alex. Findlay, Camden; R. Perkins, Warsaw; Wm. H. Kelly, Albany; Harry S. Beebe, Albion; N. D. Backus, Geneva; D. P. Hilton, New York; A. J. Truxill, Auburn; H. R. Ryder, Buffalo; W. L. Williams, Ithaca; W. L. Baker, Buffalo; John P. O'Leary, Buffalo; E. I. Smith, Cherry Creek; B. R. Wilber, Randolph; E. L. Volgenau, Buffalo; J. F. DeVine, Goshen; W. J. McKinney, Brooklyn; J. W. Turner, Lyons; J. L. Wilder, Brooklyn; Thomas Burns, Watertown; F. E. York, Brookfield; A. G. Tegg, Rochester; F. D. Holford, Avon; C. H. Taylor, Niagara Falls; James T. Twitty, Buffalo; Joseph Whytock, Buffalo; N. N. Leffler, Batavia; W. L. Mills, Perry; A. S. Miller, East Aurora; D. J. Holton, Le Roy; A. H. Twitty, Buffalo; C. F. Day, Warsaw; Geo. L. Mignerey, Buffalo; G. T. Stone, Binghamton; W. S. Eggleston, New Berlin.

The following visitors from neighboring States signed the register: Thomas E. Smith, Jersey City, N. J.; Wm. H. Gribble, Washington C.H., Ohio; C. H. Case, Akron, Ohio; L. H. Howard, Boston, Mass.; Benj. D. Pierce, Springfield, Mass.; S. Brenton, Detroit, Mich.; J. Black, Richmond, Mich.

The following veterinarians who did not sign the register were observed by the REVIEW correspondent: Wm. M. Simpson, Malden, Mass.; James Law, Ithaca, N. Y.; Wilson Huff, Rome, N. Y.; S. H. Burnett, Ithaca, N. Y.; E. J. Sullivan, Saratoga Springs; Walter J. Taylor, Ithaca, N. Y.; John O.

Moore, Wilson, N. Y.; J. E. Smith, W. E. Stocking, and P. D. Johnson (Genesee Valley Association); J. H. Taylor, Henrietta, N. Y.; O. B. French, Honeoye Falls, N. Y.

The Secretary then read his report, showing the work of his office for the past year, and followed it by his report as Treasurer. This latter report was the most satisfactory instrument emanating from this office in many years. It showed that the Society was entirely out of debt and there was a balance in the treasury of several hundred dollars, notwithstanding that one large obligation which had been hanging over the Society for a number of years had been liquidated.

NEW MEMBERS.

The following applications for membership were favorably reported upon by the Board of Censors, and they were elected:

John O. Moore, V. S. (Ont. V. C. '92), Wilson.
F. W. Andrews, D. V. M.(N. Y. S. V. C. '05), Mt. Kisco.
G. D. Holford, D. V. M. (N. Y. S. V. C. '02), Avon.
E. J. Sullivan, D.V. M. (N. Y. S. V. C. '06), Saratoga Springs.
Ed. Rafter, V. S. (Ont. V. C. '95), Hamburg.

Reports of Committees.

Board of Censors.—Favorably the five names elected to membership. Adopted. To expel Dr. Joseph Sutterby, of Le Roy, for unprofessional conduct in advertising patent medicines. Adopted.

Special Committee for Advancement of the Army Bill.—Chairman Morris detailed his efforts in behalf of the veterinary service of the U. S. Army, reading correspondence with senators and congressmen. He believed that, although it appeared that the program in Washington was to pigeon-hole all army measures during the 59th Congress, there is a strong hope of raising the bill during the coming session, and he asked that every veterinarian proceed to work upon their representatives at Washington so that every congressman will be familiar with the measure and be made to feel that there is a strong demand for the improved veterinary service. Dr. Law also told of his correspondence in behalf of the bill. A resolution was later adopted by the Society embodying the recommendations of the Committee.

Committee on By-Laws.—Chairman Berns submitted an entire revision of the by-laws, as there have been so many additions and erasures during the past few years that the old printed form was no longer a guide to the members. In addition, they

were greatly simplified by cutting out all the irrelevant and ambiguous wording which so freely characterized the by-laws, and substituting language which conveyed the intent of the law in the fewest and plainest words. The Secretary was directed to have the new by-laws printed and a copy sent to each member, so that when they come up for adoption in 1907 every one will be familiar with the changes and can vote intelligently upon the subject.

Prosecuting Committee.—Chairman Clayton reported verbally that very little had been done, for the reasons that veterinarians sent in complaints against offenders in their localities, without competent evidence to prosecute, in many instances the charges brought were unsigned, and that the Prosecuting Committee would not undertake to journey over the state and camp on the trail for days to secure evidence against offenders; that insufficient money is available in the fund, and that the law was greatly in need of amending, so as to make the offence of practicing without registration a misdemeanor, as is the case with the medical law. This defect in the law was, after considerable discussion, referred to the Legislative Committee with instructions to have the law amended at the coming session of the legislature.

Legislative Committee.—Chairman Bell reported that no legislation in which the Society was interested had occurred at the last session of the legislature. That the committee had stood ready to work in the interest of the profession upon the first alarm, but nothing had been attempted which appeared to call for action.

Committee on Resolutions.—Chairman Hollingworth read the report of this committee, which consisted of condolences upon the death of Dr. John A. Bell, of Watertown; urging veterinarians to exert themselves in behalf of the veterinary service in the Army, and two reports upon veterinary education in New York State, one a majority (signed by Drs. Hollingworth and Bell), the other a minority (signed by Dr. Morris). The Society took up the minority report, which was against any proposition to reduce the entrance requirements of the colleges in the State, and, after a long debate, passed it by a large majority. Those speaking in favor of the report were Drs. Law, Morris, Baker, Fish, and others. In opposition were Drs. Ackerman and Bell.

PAPERS AND DISCUSSIONS.

On Tuesday afternoon the business of the Association had

been cleared away, and the reading and discussion of papers was begun. The first on the program was

"Education in New York State," and consisted in two essays by members, Dr. James Law, director of the State College, and Dr. Ackerman, a practitioner. The former in a long and scholarly paper, argued in behalf of the standard of 60 counts now in operation in New York State, claiming that, although the effect upon the schools has been to greatly deplete their classes, it was not different from the experience of similar movements in other schools; that they will soon recover from the depression wrought; that young men will seek out the schools that have the highest standard, and will compensate for the present apparent losses. He dwelt upon the example set in Europe, where the requirements are much higher than in this State, Germany and France now asking a Bachelor's degree, and he quoted from the September REVIEW to show that Italy is demanding it. Dr. Ackerman argued in an opposite direction—not against higher education or higher matriculation; but he claimed that New York State had jumped too far at one bound; that although the consummation was devoutly wished, it destroyed the power of our schools to be of real service to the profession, for while undoubtedly we can turn out better educated veterinarians we get so few to educate that we do not amount to very much in the sum total of the progress being made. He contended that if the Regents had permitted the veterinary schools to remain at 24 we would have graduated a larger number, who would have gone forth as the best educated men in the country, and their individuality and success would cause others to seek their education in these schools. On the other hand, the spectacle of New York's schools teaching empty benches would deter other States from following her example. He showed that New York was not supplying the annual losses by death in the veterinary ranks, and as few men graduating outside of the State ever qualify to locate here, a problem may arise very soon as to where our supply will come from.

The debate which followed was extended, and was participated in by the essayists, Drs. Morris, Baker, Bell, and others. The subject was rounded out on the following day by the Resolutions Committee presenting a majority and minority report, the former supporting the contention of Dr. Ackerman, the latter that of Dr. Law. The minority report was adopted by a vote more than double that of the majority resolution. So

that, so far as the State Society is concerned, the Regents' action in raising the count to 60 will remain the law for a year at least.

A night session was held on Tuesday, and the paper by Dr. W. G. Hollingworth on "Municipal Milk Inspection" was presented. It was very practical, and yet dealt with the subject in a highly scientific manner. The discussion following was full of interest and many valuable points were developed. Dr. Carr Webber told of some interesting experiences in the crusade for reform in the milk supply of Rochester, while Dr. Morris gave some valuable deductions from his large opportunities in the Borden Company, of which he is chief sanitary inspector. Drs. Law, Berns, Ackerman and Stone also contributed to the discussion.

At the conclusion of the session upon milk inspection, the meeting adjourned until Wednesday at 9 A. M., at which hour it promptly convened, and the program was resumed by Dr. J. F. De Vine's paper on "Volvulus, Intussusception and Colic," which consisted in the report of quite a number of such cases. This was augmented by a recital of a case of intussusception occurring in the practice of Secretary Stone, who urged immediate operation, while the pulse was strong and the patient's strength good, but delay in obtaining consent robbed the animal of all chance of surviving.

"Typhoid Influenza" was responded to verbally by Dr. G. H. Berns, he isolating from the large number of pink-eyes, influenzas, and shipping fevers, a class of cases characterized by gastro-intestinal lesions, extreme prostration, and rapid death. He had just passed through an experience in a dealer's stable where $4,000 worth of horses (15 head) had died in one month. Always a magnet for discussion, diseases of green horses did not fail in this instance to bring the practitioners to their feet, and for an hour or more the room was turned into a veritable dealers' hospital, and experiences were freely given as to etiology and treatment. Those participating were Drs. Morris, Bell, Hollingworth, Law, Williams, Gribble, Baker, Black, Simpson, Tegg, and others. Dr. Morris was of opinion that horses were affected at the localities from which they were secondarily shipped, intermediate stables, like Buffalo, or the cars upon which they are transported, and he thought the Bureau of Animal Industry should assume charge of these points of infection. The subject of prophylactic treatment was well discussed, and many had obtained excellent results by the use of influenza antitoxine.

"One Way of Treating Toe-and Quarter-Cracks" was the subject of a paper by Dr. Roscoe R. Bell, and it will be published in an early number of the REVIEW. It was discussed by Drs. Baker, Webber, Ackerman, Black, Cochran, Berns, Thos. Burns and others.

"Milk Fever," by Dr. Wilson Huff, of Rome, dealt with this subject in a rather original manner, the author believing the trouble originated in the intestinal tract, and was primarily a condition of indigestion.

It was greatly regretted that the comparatively few papers presented had consumed all the available time of the meeting, for it was found that in order to get lunch and catch the train for Maplewood Stock Farm, at Attica, the "business" of the meeting must be resumed prior to adjournment, and that no more papers could be read. This left ten numbers announced on the program without an opportunity of presentation. Some of these authors were not present and had not sent in their contributions; but there were quite a number who were not given an opportunity, although avowedly ready to present their papers. It was the intention originally to have an evening session after returning from Attica; but many preferred a banquet; then it was suggested that when the plates were removed the papers should be read in lieu of toasts; but when the time came the hour was so late that nothing could be done in that direction. The REVIEW has agreed to print all the papers which had been prepared and were not presented, as well as most of those which were discussed. The only business transacted after the banquet was the selection of the next place of meeting. New York City (Manhattan) and Ithaca were placed in nomination, the former by Dr. Clayton, the latter on behalf of Dr. Law. Dr. Bell seconded New York, and the vote was largely in its favor. So that next year the Society will meet in the Borough of Manhattan, New York City.

VISIT TO MAPLEWOOD HACKNEY FARM.

At 2.30 more than fifty veterinarians and a number of ladies boarded an Erie train for Attica, where they disembarked upon Maplewood Hackney Farm, walking the short distance to the barns with coats off, and perspiring freely, the weather being intensely warm. At the door of the farm office waiters were standing with trays filled with iced drinks, which were most grateful to the parched throats of the pedestrians. Dr. J. W. Corrigan was guide for the veterinarians, as he is the attending

veterinarian at Maplewood, and it was through his good offices that Mr. E. T. Gay, the genial superintendent, undertook to give the members of the State Society the greatest treat of their lives, for aside from the unsurpassed hospitality shown by Senator F. C. Stevens, owner of this finest hackney stock farm in America, if not in the world, the opportunity of witnessing the grand collection of magnificent equines, was a delight to be remembered throughout life. We shall not attempt to describe Maplewood, for pen cannot depict and brush cannot paint the beauties of this model establishment, set down in the heart of a magnificent agricultural region and environed by a beauty of foliage, hills and dales that bewitches one's sense of idealism in rustic perfection. Beside the beautiful shaded drive, with barns on either side, were placed rows of chairs for the guests, and after witnessing in a pasture-lot a herd of trotting-bred dams with their half-hackney foals gamboling at their sides, a veritable private horse show was presented. First a band of pure-bred hackney brood mares passed slowly in front of us, Mr. Gay giving the pedigree and performances in the ring as each individual passed in review. Then a glorious pair of chestnuts, full sisters, raised at Maplewood, were shown to harness, with knee and hock action sufficient to compete for the Waldorf-Astoria cup. Then a group of yearling hackneys, by Langton Performer, Fandango, and other noted stallions, were shown to halter at various paces, winning generous applause from those who viewed them. Successively two-year-olds, three-year-olds, four-year olds and adults were brought from an endless stud of more than 350 hackneys. They were walked, trotted, and placed at rest, the veterinarians viewing them with the practiced eye of experts. Following these exhibits, team after team of horses, the perfection of conformation, breeding and training, were passed up through the shady drive, until finally came the climax of the afternoon : The imperial Fandango, with two of his sons, the lordly Langton Performer and two of his best get, and, although they have frequently paraded before applauding multitudes at Madison Square Garden and other great horse shows, they never received sincerer hand-clapping in their triumphal careers.

Reluctantly relinquishing the feast of eye and mind, Mr. Gay directed us to one of the large enclosed rings, upon entering which we found a large table loaded with refreshments upon which to feast our appetites. Full justice was done to the good things, and at its conclusion one of our number was

delegated to express the appreciation of Maplewood's guests for the great treat we were permitted to enjoy, and after a few words in acknowledgment by our host, three rousing cheers were given for Senator Stevens and his establishment. When a group picture had been taken, the entire company was loaded into ten vehicles, many horsed by blooded stock, and were driven to Attica Station, two miles distant, where the train was boarded back to Buffalo.

After an hour's journey on the Erie with its soft coal and open windows the bath-tub was inevitable, which delayed the opening of the banquet until a late hour. Some thirty-five sat down to a fine course dinner, intending to take up the program which had been cut short when the time arrived to go to Maplewood, but at the completion of the feast the hour was too advanced for anything beyond the choice of the next meeting place.

THE CLINIC.

The clinic was held on Thursday at James T. Twitty's Riding Academy, at 26 East North Street, beginning at 9 A. M. The riding ring had been prepared for the occasion, and, while no table nor other paraphernalia for restraining animals, excepting apparatus for casting, the place was well adapted for clinic purposes, there being abundance of side light and lots of room. The clinic at Buffalo could not in any respect compare with those at Ithaca and Brooklyn, but when it is borne in mind that one local man had to bear the burden of all the preparation and arrangements, it was a remarkable feat which Dr. W. L. Baker performed. True, he had the assistance of Dr. Corrigan and Dr. Tegg, but both of these were non-resident, and therefore could not attend to the details required for such a meeting. All in all, the clinic was creditable, and if it were not for the comparison made with the unsurpassable events of the past four years, it would have been considered an excellent demonstration. To prepare such a clinic as was given at Brooklyn and Ithaca would require that one or several men devote exclusive time to it for several weeks, and go to considerable expense in the preparation. In the former case Dr. Berns' hospital was ready prepared, with tables, stocks, and every appliance, and the same can be said of Ithaca. How, then, could a riding academy be put in condition to give comparable results. At New Haven the better facilities were the work of a local committee of eight, with sufficient funds to meet all requirements. All in all, Dr. Baker has every reason to feel sat-

isfied with the results of his endeavors, and some of the interesting cases he furnished were exceedingly well adapted for the occasion.

The following is a list of the cases presented :

I. Bay gelding, roarer. Cast and secured with side-lines. Chloroformed by Dr. Axtell. Surgeon, Dr. W. L. Williams, assisted by Drs. W. G. Hollingworth and C. H. Case.

II. Bay horse, pseudo-hermaphrodite (hermaphroditismus spurius), having a rudimentary penis passing out through a circular opening in the perineum, the testes retained under the skin high in the flank, there being no pendulous scrotum. The animal was cast and secured as for castration. Chloroform anæsthesia by Dr. Axtell. An incision made at a point which would represent the sheath, and through this opening the penis was drawn, the false glans removed for about three inches, and the original point of exit scarified and sutured. The testicles were then removed, and the animal released, taking but a few minutes to emerge from the anæsthetic. Surgeon, Dr. Williams.

III. Bay gelding, ridgling. Cast and secured in the same manner as No. II. The left testicle had been removed. The right one was rather difficult to locate, but was finally brought forth. Surgeons, Drs. J. F. De Vine and W. L. Williams.

IV. Bay gelding, fistulous tract on left side opposite last asternal rib. A long probe revealed a tract about fourteen inches in depth, running down on the inside of the rib, discharging foul-smelling pus. It was discovered that the rib had been broken in several places, and pieces of the necrotic bone were removed. Operation was deemed inadvisable at the present, but the surgeon thought a counter-opening could be successfully made later. Surgeon, Dr. W. G. Hollingworth.

V. Brown mare, farcy. This animal had broken out with many small abcesses along the course of the lymphatics on the side and neck three days previously, which some of the local veterinarians thought was a simple suppurative lymphangitis. In explanation of this it may be said that glanders is extremely rare in Buffalo, Dr. Baker averring that he had never come in contact with a case in all the years he had practiced in that city. When the practitioners from Gotham, who see about as many cases of glanders as they do colic, cast their eyes upon the characteristic farcy buds there was no romance in the disease : it was glanders and nothing else. To confirm their opinion, however, a specimen of blood was drawn from the jugular

and given to Dr. Berns, and upon his return to Brooklyn, Mr. Cassius Way applied the agglutination test, with characteristic reaction in eight hours (1:800). The test with mallein was also positive.

VI. Bay mare, stringhalt both hind legs. Cocaine injected over each peroneal tendon. Animal twitched and front foot held up. Peroneal tenotomy, subcutaneous, each leg, by Dr. S. Brenton, Detroit, Mich.

VII. Bay gelding, bone spavin, off leg. Operation, sciatic neurectomy. Cocaine locally. Surgeon, Dr. C. H. Taylor, Niagara Falls.

Dr. Baker writes that all the held-over and delayed cases were operated upon by himself and others on the following day, and he regrets that some interesting demonstrations were lost to the Society. He also states that all the cases operated upon at the clinic are doing well.

PATHOLOGICAL EXHIBIT.

Dr. W. Reid Blair, Pathologist of New York Zoölogical Park, sent a large number of pathological specimens to the meeting. These were placed on exhibition at the clinic, and were closely studied by the members and visitors. They were not identical with those shown at New Haven, for Dr. Blair shipped that collection back to the Park and rearranged them for the State meeting, replacing many of them by other specimens.

1. Five large intestinal calculi, from the cæcum of horse.
2. Several lungs, livers, spleens and kidneys, from monkeys, illustrating typical forms of monkey tuberculosis.
3. Tumor, lipoma, from the mesentery of a horse.
4. Tumor, fibroma, from the skin and fascia covering inner surface of the thigh of a horse.
5. Tumor, myxo-sarcoma, from the abdominal cavity of a Japanese raccoon-dog.
6. Tumor, actinomycotic, from the salivary gland of grizzly bear.
7. Heart of prong-horned antelope showing *Cysticerci cellulosa.*
8. Heart of wolf containing blood filariæ *(Filaria immitis)* in the right ventricle.
9. Actinomycosis of liver and diaphragm, from American prong-horned antelope.
10. Lung of American elk, showing thousands of bronchial filariæ in the bronchial tubes.

11. Uterus, fallopian tubes and ovaries of a mule deer, showing all infected with tape-worm hydatids *(Cysticercus tenuicollis)*.

12. Several large tape-worm cysts, from Asiatic mountain sheep, American antelope and deer.

13. Cystic liver, from a deer.

14. Thirty-two feet of tape-worm, from a polar bear.

15. Heart of South American monkey showing blood filariæ in the ventricles *(Filaria gracilis)*.

16. Liver of wild turkey, showing characteristic lesions of the disease known as "Infectious entero-hepatitis" (Smith).

NOTES OF N. Y. S. V. M. S. MEETING.

Dr. Nelson P. Hinkley was frequently seen flying about the streets in his auto, and with regulation cap and increased avoirdupois resembles somewhat the German Emperor.

Many of the members and visitors spent the afternoon of Thursday at Niagara Falls, taking the round trip on the Gorge Railroad, and visiting points of interest, and a few continued the trip to Toronto.

It is remarkable how one rebels when one's arrangements miscarry. Dr. Baker had plenty of clinic cases, many more than could be reached in the time allotted, and yet he was worried because some of those he had counted on failed to materialize.

There was a large delegation from the Genesee Valley Association. We noticed the following members of that thrifty organization at Buffalo: Drs. A. George Tegg, Carr Webber, J. E. Smith, P. I. Johnson, D. P. Webster, J. H. Taylor, N. N. Leffler, H. S. Beebe, J. W. Corrigan, F. D. Holford, J. O. Moore, O. B. French, W. E. Stocking, and J. L. Wilder.

Dr. John Wende was present at the clinic and in the hotel corridors; but did not honor the society at any of its seatings by occupying a chair. The old wounds in the ranks of ten years ago are very slow in cicatrizing; we hope, however, that they are granulating. There should be no strife among the members of this profession, save in striving to show who can serve the science best.

While there were not a great number of ladies present, those that did attend were splendidly entertained, and they enjoyed every minute of their stay. We gathered the names of Mrs. George H. Berns and Miss Berns, of Brooklyn; Miss Smith, of Jersey City; Mrs. E. J. Nesbitt, of Poughkeepsie;

Mrs. J. L. Wilder, of Brooklyn; Miss Wilder, of Akron; Mrs. A. J. Tuxill, of Auburn; Mrs. L. H. Howard, of Boston; Mrs. W. L. Baker, of Buffalo, and others whose names the REVIEW correspondent did not get.

There were many veterinarians present from neighboring and some Western states. From Massachusetts came Benjamin D. Pierce, of Springfield; Wm. M. Simpson, Malden, and L. H. Howard, of Boston. Michigan sent her loyal sons, Drs. S. Brenton, of Detroit, and J. Black, of Richmond, both of whom entered into the spirit of the meeting with their characteristic zest. Ohio was represented by the many sided Secretary of her State Association, Wm. H. Gribble, of Washington C. H., who writes poetry with as much grace as he displays in the use of the scalpel, and Dr. C. H. Case, who, with Dr. Gribble, has been engaged in a crusade against glanders under the direction of State Veterinarian Paul Fischer. New Jersey had but one representative, but what she lacked in quantity was fully compensated for in quality, for in Dr. Thomas E. Smith, of Jersey City, she sent a most loyal sponsor.

SOUTHERN ILLINOIS VETERINARY MEDICAL AND SURGICAL ASSOCIATION.

The seventh annual meeting of this Association met in the City Hall at Marion, Ill., Tuesday, Aug. 7, 1906, for a three days' meeting, with Dr. Bost, of Fillmore, Ill., in the chair. The meeting was called to order by the President, roll-call showing the following members present: Drs. F. N. Jensen, E. E. Downing, A. M. Hart, J. P. Dartro, J. C. Jean, Wm. Hockman, W. J. Hockman, W. H. May, C. W. Pumroy, T. M. Treece, G. J. Otke, J. R. Koonce, S. Snider, W. H. Cox, C. F. Sanders, A. Gould, G. L. Bundy, W. W. Plater, W. A. McMillan, W. A. Wilkinson, J. H. Mace, L. M. Jones, W. A. Norris, J. Keltnes, G. W. Forrest, M. Melton, E. Russell, J. N. Green, J. H. Stuck, D. Scot, P. Harrison, M. Austin, Smith, Snider, W. Wilson, J. B. Crowell. Visitor, Dr. A. Travis, of Litchfield, Ill.

The minutes of the January meeting were read and approved. The following applications of new members were read: Drs. M. Austin, L. M. Jones, G. W. Forrest, M. A. Norris, and, after passing the required examination before the Board of Censors (composed of Drs. E. E. Downing, Farina; J. B. Crowell, Marion; F. N. Jensen, Centralia; T. M. Treece,

Wolf Creek; C. W. Pumroy, Ullin), were reported to become members of the Association.

PAPERS AND DISCUSSIONS.

"Ophthalmia," by Dr. E. E. Downing, Farina. Discussed by Drs. Crowell, Jensen and Pumroy.

"Filaria Irritans," by Dr. A. M. Hart, Avena. Discussed by W. H. Cox, G. L. Bundy and W. H. May.

"Diseases of the Hock," by Dr. J. B. Crowell, which brought forth a very interesting discussion by the following: F. N. Jensen, L. A. Stout and G. A. Elliot.

Meeting adjourned till 7.30 P. M.

7.30 P. M. Meeting called to order by the President. Address by ex-President E. E. Downing on "The Advancement of Veterinary Science;" responded to by Dr. A. Travis, of Litchfield.

Meeting adjourned till 7.30 A. M., Aug. 8.

Aug. 8, 7.30 A. M., meeting called to order by the President.

"Splints, Causes and Treatment," by Dr. J. R. Koonce. Discussed by C. F. Sanders, J. H. Mace, and M. Austin.

"Catarrhal Fever," by G. A. Elliot. Discussed by J. B. Crowell, W. H. May, F. N. Jensen.

"Fistula," by C. W. Pumroy. Discussed by V. A. Bost, W. H. Cox, G. L. Bundy, and M. A. Hart.

"Castration," by W. H. Cox. Discussed by Dr. L. A. Stout, Dr. Melton, W. A. C. Wilkinson.

Meeting adjourned to meet at the Fair Grounds for clinical work at 1.00 P. M.

THE CLINIC.

By request of the Association, Dr. A. Travis, of Litchfield, Ill., was asked to take charge of clinical work.

Dr. Travis called for order in the amphitheatre, with about 200 citizens of Marion present, besides the members of the Association.

I. Mule, eight years old; fistula over squamosal. History: Snagged when two years old; operated upon three times. Mule cast and secured. Piece of bone resembling point of rib removed. Operator, Dr. A. Travis.

II. Bay mule, enlargement of sesamoid bone. History unknown. Fired and blistered by Dr. Travis.

III. Brown mare, six years old, ulcerated third upper molar. Extracted by Dr. J. B. Crowell.

IV. Black mule, four years old, capped hock. Blistering advised.

V. Colt, seven months old, scrotal hernia. Operated on by Dr. A. Travis.

VI. Sorrel filly, two years old, tongue lolling. Amputation of same by Drs. Travis and Crowell.

VII. Bay draft mare. Carcinomatous tumor on right shoulder. Local anæsthesia applied. Removed by Dr. A. Travis.

VIII. Passing of Phillips' stomach tube by Dr. A. Travis.

IX. Gray mare, ten years old, bone spavin. History: Animal had been lame about two years. Animal cast and placed under an anæsthetic. Cunean tenotomy by Dr. A. Travis.

Adjourned till Aug. 9, 7.30 P. M.

SECOND DAY.

Thursday, Aug. 9, 7.30 A. M., meeting called to order by the President.

PAPERS AND DISCUSSIONS (CONTINUED).

The following papers were read and discussed: "Navicular-thritis," by Dr. T. M. Treece. Discussed by F. N. Jensen, C. W. Pumroy, and L. A. Stout.

"Indigestion," by W. W. Plater, Carbondale. Discussed by Drs. A. M. Hart, G. A. Elliot, and L. A. Stout.

"Parturient Paresis," by Dr. C. Williams, of Mt. Vernon. Discussed by Drs. A. M. Hart, W. H. Cox, T. L. Bundy, and M. Austin.

Meeting adjourned to meet at Dr. Crowell's hospital to finish clinical work.

CLINIC (CONTINUED).

X. Brown gelding, ten years old, supracarpal tenotomy. Operation by Dr. Travis.

XI. Ovariotomy (bitch), by Dr. Travis.

XII. Caponizing roosters, by Dr. Travis.

XIII. Castration, two ridglings, by Dr. Travis.

XIV. Gray mare, twelve years, stringhalt. Peroneal tenotomy, standing, by Dr. Travis.

XV. Removal of two water-seeds in mule, by Dr. Travis.

XVI. Mule, seven years old, decayed second upper molar. Trephined and removed by Dr. L. A. Stout.

XVII. Mule, nine years old, with exostosis on inferior maxilla. Removed by Dr. Travis.

Meeting adjourned to meet in January, 1907, at Mason, Ill.

L. A. STOUT, *Secretary.*

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President Law has made the following appointments of

COMMITTEES FOR 1906–07:

Executive.—W. H. Dalrymple, chairman; M. H. Reynolds, Roscoe R. Bell, S. Brenton, D. S. White, W. L. Williams. *Ex-officio*, James Law, J. G. Rutherford, L. A. Merillat, W. T. Monsarrat, E. B. Ackerman, H. Jensen, R. P. Lyman, G. R. White.

Finance.—J. J. Repp, chairman, C. E. Cotton, R. W. Ellis.

Publication.—C. J. Marshall, chairman; R. P. Lyman, A. M. Farrington, E. M. Ranck, J. B. Paige.

Intelligence and Education.—Leonard Pearson, chairman; D. Arthur Hughes, M. H. Reynolds, George R. White, Adolph Eichhorn.

Diseases.—V. A. Moore, chairman; A. D. Melvin, L. A. Merillat, Chas. H. Higgins, John R. Mohler.

Resolutions.—S. Stewart, chairman; Austin Peters, J. L. Robertson, Wm. Herbert Lowe, M. E. Knowles.

Necrology.—George H. Berns, chairman; A. H. Baker, Wm. Dougherty, E. L. Quitman, J. E. Ryder.

Army Legislation.—J. P. Turner, chairman; T. Earle Budd, A. S. Cooley, J. H. McNeil, W. H. Kelly.

President Law has also appointed the following

RESIDENT STATE SECRETARIES.

Alabama.—C. A. Cary, Auburn.
Arizona and New Mexico.—J. C. Norton, Phœnix.
Arkansas.—R. R. Dinwiddie, Fayetteville.
California—Carl W. Fisher, San Mateo.
Colorado and Utah.—C. D. Lamb, Denver.
Connecticut.—G. W. Loveland, Torrington.
Delaware.—H. P. Eves, Wilmington.
District of Columbia.—A. D. Melvin, Washington.
Florida.—J. G. Hill, Jacksonville.
Hawaii.—W. T. Monsarrat, Honolulu.
Illinois.—L. A. Merillat, Chicago.
Indiana.—R. A. Craig, Lafayette.
Iowa.—G. A. Johnson, Sioux City.
Kansas and Oklahoma.—S. Stewart, Kansas City.
Kentucky.—D. A. Piatt, Lexington.
Louisiana.—M. M. White, Shreveport.
Maine.—A. Joly, Waterville.
Maryland.—F. H. Mackie, Baltimore.
Massachusetts.—B. D. Pierce, Springfield.

Michigan.—G. W. Dunphy, Quincy.
Minnesota.—C. E. Cotton, Minneapolis.
Mississippi.—J. C. Robert, Starkville.
Missouri.—J. M. Phillips, St. Louis.
Montana.—M. E. Knowles, Helena.
Nebraska.—A. T. Peters, Lincoln.
Nevada and Idaho.—J. O. Jacobs, Reno.
New Hampshire.—Lemuel Pope, Jr., Portsmouth.
New Jersey.— J. T. Glennon, Newark.
New York.—W. H. Kelly, Albany.
North Carolina.—Tait Butler, Raleigh.
North Dakota.—L. Van Es, Fargo.
Ohio.—Paul Fischer, Columbus.
Oregon.—J. M. Creamer, Portland.
Pennsylvania.—J. W. Adams, Philadelphia.
Philippine Islands.—G. E. Nesom, Manila.
Porto Rico.—T. A. Allen, San Juan.
Rhode Island.—T. E. Robinson, Westerly.
South Carolina.—L. A. Klein, Clemson College.
South Dakota.—E. L. Moore, Brookings.
Tennessee.—G. R. White, Nashville.
Texas.—M. Francis, College Station.
Vermont.—F. A. Rich, Burlington.
Virginia.—Jno. Spencer, Blacksburg.
Washington.—M. Rosenberger, Pullman.
West Virginia.—L. N. Reefer, Wheeling.
Wisconsin.—W. H. Perrigo, Milwaukee.
British Columbia.—S. F. Tolmie, Victoria.
Cuba.—N. S. Mayo, Santiago de las Vegas.
Manitoba.—F. Torrance, Winnipeg.
North West Territory.—J. F. Burnett, Macleod.
Nova Scotia.—W. H. Pethick, Antigonish.
Ontario.—J. H. Tennent, London.
Argentina.—Pedro L. de Carril, Buenos Ayres.
Uruguay.—D. E. Salmon, Montevideo.
South Australia.—J. Desmond, Adelaide.

In addition to the list of New Jersey veterinarians in attendance at the New Haven meeting of the A. V. M. A. published in the September REVIEW, Dr. Henry Vander Roest, of Newark, and Dr. B. F. King, of Little Silver, were present as delegates from the Veterinary Medical Association of New Jersey.

In the list of those in attendance upon the recent New Haven meeting, published in the September REVIEW, there

were omitted the names of Drs. S. Brenton, and Harry E. States, of Detroit, Mich., both of whom are members. These two names will bring the list of members in attendance up to 146, and will swell the total attendance to 376.

The following letter from Dr. John R. Mohler, Chief of the Pathological Division of the Bureau of Animal Industry, is in relation to Case XVII, which occurred in the Clinic at New Haven, reported in September REVIEW, page 766: "Referring to the specimens obtained from the conglomerate nodular growths on the thigh of a bay gelding, 10 years old, presented at the New Haven clinic of the A. V. M. A., you are advised that a microscopic examination of the tissue shows that the tumors should be classed as fibro-sarcomas. The tendency of tumors of this variety is to invade normal tissue following the course of the blood and lymph vessels, where they spread widely and persistently, as was noted in this particular instance, and I am therefore of the opinion that operative removal of these growths would not have resulted satisfactorily."

THE NORTH CAROLINA VETERINARY MEDICAL ASSOCIATION held a two-day meeting July 5 and 6, at Winston-Salem. G. A. Roberts, D. V. S., West Raleigh, was elected President; W. G. McMackin, Raleigh, Vice-President; C. J. Fleming, Winston-Salem, Secretary, and Adam Fisher, Charlotte, Treasurer. Dr. Charles F. Dawson, State Veterinarian of Florida, was present.

A CIVIL SERVICE EXAMINATION is called for October 17th to secure eligibles from which to make appointments to fill a vacancy in the position of veterinary inspector at Honolulu, Hawaii, at $1,400 per annum, and similar vacancies as they may occur in the United States, at $1,200 per annum each, in the Bureau of Animal Industry. The Department states that the number of eligibles obtained as the result of the examination held on August 8 will not be sufficient for the needs of the service, and qualified persons are therefore urged to enter the examination. Applicants must be graduates of veterinary colleges. Those graduating prior to or during 1897 will be admitted if from colleges having a course of not less than two years in veterinary science; since that time must be graduates of colleges having a course of not less than three years. Applications should be made to the U. S. Civil Service Commission, Washington, D. C., for application form 1312.

NEWS AND ITEMS.

DR. H. M. RINEHART, M. D. C., has removed from Colchester, Ill., to Blondinville, in the same State.

DR. G. W. BUTLER, B. A. I., has been transferred from Eau Claire, Wis., to Louisville, Ky., and placed in charge.

CAPTAIN A. H. WADDELL, late of the Veterinary Department of the British Army, has located at Warrenton, Va.

DR. FRED C. CATER, veterinarian to the Bureau of Agriculture, Philippine Islands, sailed from Manila for New York on Sept. 1.

AN illustrated article on "Operating Tables," by Dr. W. L. Williams, is now in our hands, and will appear in the November REVIEW.

WE find in a recent number of the *Breeder's Gazette* a *résumé* of the important work done at the 43d annual meeting of the A. V. M. A.

"THE MEAT INSPECTION MOVEMENT AND AFTER," by Dr. D. Arthur Hughes, has been specially prepared for the October REVIEW, and no veterinarian should fail to read it.

THE scientific investigations which Prof. Charles A. Doremus and Dr. W. W. Yard have been engaged in have been completed, and Dr. Yard has returned to quarantine work in Colorado.

THE close of the present session of the New York State Veterinary College will mark the retirement by the age limitation of Director James Law, who has guided its fortunes since its establishment.

VETERINARY DIRECTOR-GENERAL RUTHERFORD, of Canada, is testing the open-air treatment of cattle that have reacted to the tuberculin test, on a farm a short distance from Hull. The cattle are of different breeds and ages, including some calves.

IN Pennsylvania there were registered 2,000 veterinary practitioners under the old law; reregistration with the Examining Board has reduced this number to 802. Many have died, moved from the State, or were registered illegally, and 360 are unaccounted for.

"I CANNOT SAY ENOUGH of the excellent things that have been in the REVIEW the last year, and I cannot tell you how much I appreciate it or how much good it has been to me. I can't see how any practitioner could get along without it and keep up with the times."—*(G. L. Meholin, V. S., Fairfax, S. D.)*

AUTOMOBILE RACES, which have been a feature of the New York State Fair, at Syracuse, for several seasons, were ruled off this year and the track given over exclusively to the horse, who won the greatest triumphs at speed and in the show ring.

AT the semi-annual meeting of the Pennsylvania State Veterinary Medical Association, held at Gettysburg, Sept. 19, the principal speaker was Dr. Leonard Pearson, whose subject was "The Latest Developments in Vaccination Against Tuberculosis and the Value to Animal Husbandry of the Practical Application of the Method."

THERE appears to be serious trouble in Vermont over the sale of condemned cattle by the Cattle Commissioners. In the political fight for the Governorship last month the subject was worked up as an issue, and an investigation seems to show that there was foundation for the charges. A specific case was investigated, showing that 200 head of cattle, condemned for fertilizer, were sold to dealers for $11 per head, and these dealers converted them into food products. Dr. F. A. Rich, veterinarian to the Commission, has been dismissed.

DR. DAVID ROBERTS, Waukesha, Wis., has been appointed State Veterinarian of Wisconsin in place of his brother, Evan D. Roberts, whose death was recorded in the September REVIEW. There is considerable feeling among the veterinarians of Wisconsin against Dr. Roberts, who conducts a patent medicine establishment, gives away a book of instructions to stock-owners, and covers the State with wagons selling his nostrums.

AN IMPORTANT BULLETIN just issued by the Bureau of Animal Industry is entitled "The Tuberculin Test of Hogs and Some Methods of their Infection with Tuberculosis," by E. C. Schroeder, M. D. V., and John R. Mohler, V. M. D. The recent increase in the frequency of the disease in swine led Dr. Melvin, Chief of the Bureau, to direct a number of experiments to test the value of tuberculin as a diagnostic for the disease in hogs, and also to gain information as to the manner in which these animals contract tuberculosis. The conclusion is reached that its application is practical for hogs, and the results are as reliable as for cattle, *provided the hogs are kept very quiet* for some time before and throughout the test. It is also shown that hogs contract tuberculosis through the ingestion of infected food, and the fæces of cattle that swallow tubercle bacilli are highly infectious for hogs that are exposed through eating them. Veterinarians should secure Bulletin No. 88, giving the full details.

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AMERICAN VETERINARY REVIEW.

DECEMBER, 1906.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, Oct. 15, 1906.

IS PLEURO-PNEUMONIA CONTAGIOUS TO OTHER ANIMALS THAN CATTLE?—In one of my last "Chronicles" I related the experiments of Riegler and Ciuca, in relation to the transmission of glanders to bovines, thus doing away, so to speak, with the idea that bovines were refractory to the infection of the glanderous microbe.

To-day I will record another blow to an admitted opinion upon another contagious disease. But this time it will be on a cattle disease, namely, pleuro-pneumonia, and on its transmission to animals of the ovine and caprine species.

Pleuro-pneumonia of large ruminants has always been considered as a contagious disease, exclusively inoculable to bovines, and even this impossibility to transmit it to other species of animals has been the means to confirm its diagnosis. Indeed, experimental inoculation of the serosity taken from an hepatized lung has always been negative in all animals except bovines. Goats, sheep, dogs, pigs, fowls and even men, said Willems in 1850, have been inoculated without any results whatever. When later, a virulent and pure lymph was obtained from puncture in the subcutaneous œdema of a calf, according to the method of Pasteur, massive injections were frequently made under the skin, in the pleura and the peritoneum of various animals, always without success. Sheep and goats remained refractory to the infection. In 1898, Nocard and Roux, with the

collaboration of Borrel, Salimbeni and Dujardin Baumetz, discovered the pathogenous agent of pleuro-pneumonia, and of course of its culture. These discoveries made the diagnosis much easier in doing away with all need of controlling inoculation.

For the cultures, the serum of bovines was always employed, and of course all attempts made again to inoculate other animal but cattle proved as before unsuccessful. The results were similar—whether when the serosity from a swelling or bouillon of culture was used, they remained always negative.

Continuing his experiments on the subject, Dr. Dujardin Baumetz has published recently in the *Annals de Pasteur Institut* the result he has obtained. Doing away with culture on beef serum, he resorted to cultures made on ovine serum, and instead of a bouillon-serum-beef, he employed a bouillon-serum-sheep, using for its preparation the strong virus, taken from a typical case of pleuro-pneumonia.

This serum was inoculated to a sheep in massive doses. The results were: Elevation of temperature, formation of a hard characteristic swelling, from which serosity was extracted and inoculated to cattle and gave rise to the development of the swelling of the disease. A few days later there was apparition of lameness in one leg, acute arthritis, which lasted several days. All these manifestations are similar to those which have been observed in calves.

A second sheep was again inoculated with a smaller dose. The first had 100 c.c., the second only 10 c.c. Swelling and arthritis were also manifested after the regular time. The blood of this animal gave cultures of pleuro-pneumonia. Some of this culture inoculated to a third sheep gave again rise to similar manifestations. Consequently: here are three animals, ruminants of a species refractory to pleuro-pneumonia, which after inoculation of bovine virus cultivated on bouillon-serum-sheep, have presented a swelling entirely analogous to that of diseased pleuro-pneumonic cattle. And the proofs of which are given, first by the characters presented by the microbe, which

were those of the microbe of pleuro-pneumonia, but again by inoculation; serosity taken from the swelling of the third animal of experiment was cultivated on bouillon-serum-beef and after several cultures inoculated (2 c.c.) to a cow. After an incubation of 12 days this cow presented a characteristic swelling, which proved fatal, the injection having been made in the forbidden region, behind the shoulder. Some serosity from the swelling of this cow injected to one sheep, gave of course rise to no result.

A simple change in the bouillon of culture, substituting a serum to another has been sufficient to promote in a refractory species the experimental swelling of pleuro-pneumonia.

* * *

Will the serum of other animal species have identical properties?

The affirmative can be given as far as the serum of horses goes, which on account of being easily procured, has been used by the Doctor. A lamb receives 5 c.c. of a culture of pleuro-pneumonia on bouillon-serum-horse. After a certain time, it has a swelling, it has arthritis also.

Experiments made on goats have given similar results also, whether the inoculations were made with cultures of serum of goats, of sheep, or of horse; in all the pleuro-pneumonic swelling has been the rule.

From all these experiments, it seems as if one is authorized to believe, that the animals above mentioned are not the only ruminant individuals in which the resistance to pleuro-pneumonia can be overcome, and it is probable that by searching in others a similar condition might be found.

The results of these inoculations, with different serums, as far as the immunity granted, remains yet to be studied. Also the results that may be obtained with serum of horse, in which massive doses of virus have been injected. Those will be made known later.

* * *

THE TREATMENT OF PURPURA HÆMORRHAGICA.—In that

excellent contemporary, the *Revue Générale*, where one can always find valuable information, there has been published an interesting review of the "Etiology and Treatment of Anasarca in the Horse," by Mr. Drouin, where the following is found:

The non-contagious entity, not inoculable, known as anasarca in France, is designated under various names (petechial fever, morbus maculosus, purpura hæmorrhagica, disease of Werthoff) in other countries. There are different opinions on the causes of this serious affection. For some it is a primitive disease; for others it is always secondary. And, finally, there are a few who consider it sometimes as primitive and again as secondary. The theory of primitive origin is no longer accepted, with the numerous examples showing that it generally succeeds other preëxisting diseases, or is grafted on them. To-day, if clinically it is always considered as consecutive to an infectious disease, microbiologists see in it a disease, the function of a microbe or of a microbian association. And, in fact, in the middle of the swellings of anasarca, numerous microbes are found, but none is specific and able to reproduce the disease, by itself alone. There is one, the streptococcus, whose action has seemed preëminent, because it was the one which was most frequently observed; but Lignières has proved that it needed, in order to give rise to the manifestations of anasarca, to find a soil already prepared by another microbian infection, and among these the pasteurellic infection is without doubt the most efficacious.

* * *

Many times the conclusions of Lignières have been sanctioned by clinical facts. At the present time, the action of the streptococcic infection of human type or of strangles origin, complicating a preëxisting microbian affection, is clearly established, and it explains well the etiology of anasarca, which before remained rather obscure. This constatation has been followed by very positive practical results in relation to the treatment of the disease. The sero-therapeutic method, inaugurated in 1895, consisting in the injection of monovalent anti-

streptococcic serum under the skin, gave in 1898 82 per cent. of recoveries, while with the old treatments only 23 per cent. is obtained.

The failure of the monovalent serum against some forms of anasarca, and especially against those following strangles, proved that it was necessary to have a polyvalent serum—that is, one which would be efficacious against the streptococcus of man and also that of the horse, so much more that quite a number of diseases of horses are complicated with strangles streptococcic infection.

And then, from 1903, the polyvalent serum of Pasteur's Institute gave a greater number of recoveries (85 per cent.) in France, at least.

* * *

In foreign countries, the therapy of anasarca in late years has consisted, according to the method of Dieckerhoff, in venous injections of collargol in aqueous solution 1 : 50, the dose varying between 50 centig. and one gramme. It had only a short success and lowered the mortality very little. Yet some very encouraging results have lately been obtained in France —eight recoveries out of nine cases.

Old methods of treatment are more and more laid aside, as experience has shown that in anasarca the forced administration of drugs is dangerous and often more injurious than useful. Likewise with external revulsive applications. Scarifications, red iron punctures, and in general any armed interference on the skin creates doors of entrance, too widely open, to all secondary infections. They must be avoided.

To resume, in anasarca, outside of the direct therapy of threatening symptoms, the best mode of treatment consists in injecting polyvalent antistreptococcic serum, as early in the disease as possible. Some forms, especially serious, such as with mixed infections, resist to this mode of treatment, but no other has given better results. In all cases the recent methods have the advantage of protecting the diseased animals from all the complicated and massive pharmaceutic compounds that were

given to them and whose good effects are less demonstrated than their danger.

* * *

THE RELATIONS BETWEEN HUMAN AND BOVINE TUBERCULOSIS have been, for Mrs. Doctor L. Rabinowitsch, the subject of a communication in the *Berliner Klinische Wochenschrift*, which has been reviewed in the *Revue Générale* as follows:

"The frequency of primitive tuberculosis of the intestine, according to statistics, varies very much. While Wagener finds 16 per cent. among the children affected in a Berlin hospital, in a similar centre Orth, in the same period, finds only 1.5 per cent. The following year, when Edens finds 35.5 per cent. of primitive intestinal tuberculosis, Orth gives one statistic of only 8 per cent. Such great differences, in a similar centre, can evidently be due only to the difficulty with which tuberculosis can be classified as primitive. And, as it results from a discussion which took place between Orth and Edens before the Medical Society of Berlin, intestinal tuberculosis is not in an absolute manner due to the infection of man by bovine tuberculosis, as a food soiled with bovine or even human bacilli may not give rise to any intestinal lesion. And, besides, it is well established that the tuberculous bacillus may rapidly pass through an intestinal wall which has no lesion whatever.

"The causes of the frequency of the infection of man by bovine tuberculosis can be determined only after having tried to differentiate the bacilli of bovine from those of man.

"The morphological characters are neither sufficient nor constant to allow that differentiation. The bovine bacillus grows with more difficulty than the human when on artificial media, and especially in the first generations. The nature of the media seems to influence the growth and perhaps some indications might be derived from this. Inoculation with large doses of tuberculous matter or of pure cultures gives the same results. Tuberculosis of bovine origin seems, however, to show itself more virulent for rabbits than tuberculosis of human origin.

"With these few characters, Dr. Rabinowitsch has succeeded in differentiating, by the following manner, twenty tuberculous bacilli from man in two cases, one of primitive intestinal tuberculosis, the other of alimentary tuberculosis, the bacilli behaved as bovine bacilli; in six other cases, the bacilli, a little different from the human type, but yet not like the bovine, came twice from primitive intestinal tuberculosis, once from alimentary tuberculosis, and three times from miliary tuberculosis. In one case, there was found a bacillus which had all the characters of the aviary bacillus and which was virulent to fowl, especially by ingestion. Finally, in the eleven other cases, there was bacilli of perfectly characteristic human type.

"These researches show that it is possible to extract from the tuberculous matters of man bacilli having all the characters of the bacilli of bovine origin. Those results answer positively the question of the possibility of tuberculous infection of man by bovine tuberculosis. This possible mode of infection is generally admitted and all authors acknowledge the danger of alimentary products of animal origin containing tuberculous bacilli.

* * *

"Those who have denied the danger of bovine tuberculosis for children have taken for their cause the rarity of primitive intestinal tuberculosis and the frequency of lesions of the respiratory apparatus and of its annexes in children. Rabinowitsch objects to this, in recalling the facts which show the passage of the tuberculous bacillus through sound intestinal wall, as has been done by many, and the more interesting experiments which have lately established in an indisputable manner the pathogeny of tuberculosis. And in the clinical records it is shown that physicians have accepted the fact of the possibility of a tuberculous infection of alimentary origin without intestinal lesions. The proof of the possible infection of man is furnished by the experiments of Nocard, who succeeded in infecting monkeys more severely with bovine than with human

bacilli, and also by those of von Dungern, who infected anthropoid monkeys with bovine bacilli.

"The conclusions are: that the possibility of the infection of man by bovine tuberculosis is demonstrated, without it being possible to fix exactly the extent of the danger; and that the fight against bovine tuberculosis must be kept up, not only in the interest of animal reproduction, but also as a protective measure in behalf of public health."

* * *

NEW METHOD OF VACCINATION AGAINST TUBERCULOSIS.—The readers of the REVIEW have been made acquainted with the experiments carried out here and elsewhere, and which have demonstrated that the infection of tuberculosis of the lungs is not ordinarily due, as was generally supposed and believed up to this day, to the inhalation of infecting dusts, but that it results most often from the absorption of tuberculous bacilli through the digestive canal. From this to think that it might be possible to vaccinate animals susceptible to tuberculosis against natural infection by the digestive tract, in giving them when young modified bacilli attenuated or deprived of all virulency, there was but a short step, and it was soon made!

Calmette and Guerin gave bacilli of human origin to young bovines, and when they stopped reacting to tuberculin, gave them 5 centigrammes of fresh bovine tuberculosis. This was not followed by any reaction to tuberculin, while one control animal had a reaction of 1.9°. This method may be simpler than Behring's, but it yet has the inconvenience of requiring the use of bacilli virulent to man.

Other experiments having demonstrated that dead tuberculous bacilli pass through the intestinal walls as well as the living do, and are found in lymphatic glands, these experimenters tried a similar experiment with dead bacilli and with bacilli whose virulency had been attenuated, afterwards giving fresh bovine tuberculosis surely virulent for witnesses. The results were the same and the conclusions derived were that young calves could be vaccinated by the simple absorption through

the intestine of bacilli modified in their virulency by heat, and that this mode of vaccination presented no danger whatsoever. It remains to multiply the experiments upon a larger number of animals, sufficiently numerous to justify the application of the discovery to the general vaccination of all young cattle and to the prophylaxy of tuberculosis.

Similar results seem to have been obtained by others, and among them I may mention Dr. Roux and also Prof. Vallée, without omitting Director Arloing, who affirms that the digestive channel is offering itself to give an active immunization to all young ruminating animals with human or with bovine bacilli properly modified, with even a wide latitude in the selection of the bacilli.

* * *

CURABILITY OF TUBERCULOSIS.—If the prophylaxy of tuberculosis occupies the attention of many, there is also a class of investigators who are looking in another direction—that of its curability. The results obtained by Dr. Guillere, which I related some time ago, are known to our readers. An experiment, in the same direction, has been brought to light by Drs. Lannelongue, Achard and Gaillard in a communication made before the Académie des Sciences. They have been for years trying to extract an efficacious antitoxin from bacilli. The one that they have obtained they tried in pulmonary tuberculosis of guinea-pigs, which have great receptivity for the human bacillus and react about as man does against tuberculous infection. They say: "It is just to believe that, if a guinea-pig can be cured of an attack of experimental tuberculosis, man may also, just as he may be protected from the disease, if guinea-pigs can be by a discovered vaccine?"

Guinea-pigs were inoculated in the lungs with the same dose of virus taken from a culture: some were kept as witnesses, the others were treated either with normal serum of a donkey or with serum presumed antituberculous. These treated with this last received the inoculation, either as preventive or as curative. After one year, the mortality was 90 per cent. among

the witnesses, 87 per cent. in the animals treated with normal serum, and 40 per cent. in those that had received the antituberculous serum.

It is evident that the serum has shown itself efficacious, but the preventive treatment with the toxin and dead bacilli has been rather injurious. In all these experiments, while the generalized lesions were large in the witnesses, the animals that had been treated showed only lesions limited to the thoracic organs.

Whether serum of donkey or of another animal, the question remains still open!

* * *

THE USE OF HORSE MEAT FOR FOOD.—In perusing lately a sanitary report on meat inspection, I came across some facts relating to hyppophagy that are not without historical interest.

The use of horse meat has increased considerably in all countries, thus showing the success of the propaganda made a little everywhere to overcome the objections that most people have against this food. It was with this intention that the "Tierschutzverein" was created in Germany. In England and in Italy similar committees exist. In Austria the use of horse meat is so common and so general that there is no longer need of a propaganda. It is true that, contrary to what may be believed, Austria consumes, generally speaking, more meat than any other nation: the annual average consumption by each inhabitant is, indeed, 111 kilog. 600 grams, against 54 kilog. 400 grams in the United States; 47 kilog. 600 grams in England, 39 kilog. 500 grams in Sweden and Norway, 33 kilog. 500 grams in France, 31 kilog. 600 grams in Germany, 22 kilog. 200 grams in Spain, and 10 kilog. 400 grams in Italy.

In olden times, among primary people, the use of horse meat was constant, and Germans principally eat the meat of the horses that they sacrificed to their gods. It was about the eighth century, after Gregory the Third, that people stopped eating horse meat—that is, among Christians—because it was forbidden by the Pope. In China the use of that meat has

existed for centuries. The first European people, in modern times, that began the use of horse meat were the Danish, which resorted to hyppophagy in 1807, when Napoleon invaded that country. It is also due to him that in 1815 the Germans were obliged to resort to it, on account of great famines that existed in Germany after the long wars of that time. In Prussia, the first horse butchery was regularly opened in 1847. In France it is only since 1870 that the use of horse meat has become generalized.

* * *

BIBLIOGRAPHY.—The Bulletin of the Agricultural Experiment Station of the Louisiana State College, with the report of Dr. W. H. Dalrymple, M. R. C. V. S., on the "Available Stock Foods," and where the advantages of molasses are masterfully brought out; some pamphlets from the Bureau of Animal Industry, on "How to Get Rid of Cattle Ticks" and on "Actinomycosis"; the *Transvaal Agricultural Journal*, with an article on "Veterinary Hygienic Principles Applicable to Stock in South Africa," by Dr. Arnold Theiler and C. E. Gray, M. R. C. V. S.; also one containing "Notes on Experimental Redwater Inoculations," by G. A. Maynard, and another on "Mange of Sheep," by James Chalmeres, G. V. S., were this month among the communications that I received, besides our exchanges. Amongst these latter, I must notice the *Semaine Vétérinaire*, which in its number of August 26, calls the attention of its readers to the meeting of the A. V. M. A., in most flattering terms. After taking notice of the various parts of the program, and especially of the clinical and surgical portions of it, the writer says: "Similar organization, when we have large meetings or congresses, would be a fortunate innovation. Numbers of veterinarians, keeping step with the progress of science through veterinary periodicals, hear every day of the advantages of a new mode of operation, the technic of which they are ignorant and cannot perform themselves. This would be a good way to realize mutual teaching, truly practical, by inviting a few of our colleagues, those that are initiated to those surgical

wonders or to the minutæ of difficult diagnosis, to be present at similar tournaments. Let our professional meetings take example of the American Veterinary Association, and there is no doubt our practitioners will come in greater numbers and follow the works of our congresses."

Let me give good warm thanks to *La Semaine Vétérinaire!*

* * *

But I have also other works of greater importance. First, a book on general surgery, and, second, one on special surgery. The "General Veterinary Surgery" is a translation from the German, by D. Hammond Udall, B. S., A. L., D. V. M., associate professor of surgery and obstetrics in the College of Veterinary Medicine of the Ohio State University. It is published by the house of Taylor & Carpenter, at Ithaca, N. Y. The original German work has seen two editions already and we are presented with the translation of the third. This, besides the name of the German author, are more than sufficient to speak in favor of the book. Indeed, Professor Dr. Fröhner is known all over the world, for his many valuable contributions to veterinary literature, which are above criticism. The translator tells us that he has undertaken the task to meet the need of an English text-book on the subject. I must confess that this is rather a surprise to me, as I fancy there are works which treat of the subjects that have found place in the work of Prof. Fröhner.

Let us glance at the contents and let the reader judge.

Wounds and their varieties; subcutaneous injuries of soft parts, inflammation, ulcers, fistula, gangrene, tumors, concrements and foreign bodies; hernia and prolapse; diseases of bones, of joints, of tendons, tendon-sheaths and mucous bursæ, of muscles, fasciæ and nerves, of vessels, of glands, and the surgical diseases of the skin and mucous membranes—the whole being completed with an appendix on congenital malformations of surgical importance.

The book of Prof. Udall is a very valuable addition to veterinary literature in America, and will find numerous readers,

as all good books do; but I fear it will be found hard to read on account of the peculiar way the printing has been done, so as to draw special attention wherever the author has desired to do it.

* * *

The book which I have said was on special surgery has for title "Surgical Diseases of the Dog and Cat." It is also a second edition and is written by Professor Frederick T. G. Hobday, F.R.C.V.S., F.R.S.E. Of course, it is published by the London house of Bailliere, Tindall & Cox.

The author is well known and his writings are found frequently in our English publications. Indeed, many of the contents of the new book have already appeared in the English veterinary papers. But it matters not, the book is most interesting from one end to the other. It is practical, it is as scientific as a little hand book of that kind can be and it is certainly complete and none can be compared with it, covering as it does in its 362 pages and its 241 illustrations the entire subject of diseases likely to require surgical interference.

The work is divided into twenty-three chapters, arranged as follows: General rules for treatment of the patient before and after a surgical operation; antiseptic preparation of instruments, drainage tubes, sutures, sponges, etc.; methods of securing; administration of anæsthetics; accidental and operation wounds; abscess, cyst, sinus, fistula and polypus; tumor, inflammatory growths, granuloma; operation on the ear; on the skull, face, lips and nostrils; on the eye and the eyelids; on the mouth, pharnyx, tongue and teeth; on the throat and neck; on thoracic and abdominal walls; on the stomach and intestines; on the rectum and anal region; on the omentum, liver, spleen and pancreas; on hernia; on the urinary organs; on the male generative organs; on the female generative organs; on cases of difficult parturition; on the limbs and tail. The last chapter is on the value of the Roentgen rays in diagnosis. Handsomely gotten up, beautifully illustrated, pleasant to read and full of valuable information, this little book comes just in

time when the specialty of canine and feline medicine is assuming in veterinary practice the place it is called to occupy.

A. L.

"THE VALUE TO THE NATION OF VETERINARY SCHOOLS."

We are fortunate in being able to present to our readers this month the address which Dr. Leonard Pearson delivered before the annual meeting of the Pennsylvania State Veterinary Medical Association last March under the above title. The author has gathered with great care and stated in eloquent and forceful manner, an array of convincing facts sufficient not only to impress the layman with the value of veterinary education, but strong enough to astonish many members of the profession itself who have hitherto failed to appreciate the great part which animal husbandry plays in the world's economy, and the close relationship borne by the teachings of veterinary science to the success of animal husbandry. When it is contemplated that in most lines of human endeavor the New World is unwilling to long remain far behind other civilized nations, it seems almost beyond realization that in some of the arts and sciences America has almost failed to make an impression, though surpassing the world in the majority.

While veterinary education has probably advanced more rapidly in the past thirty years in this country than in any other land, it has done so almost solely through private effort. Only in a very few of the states have veterinary schools been given any support, and these in such modest sums as to prevent great results being obtained. The cost of the equipment and yearly maintenance of all is probably less than any one of the six schools of Germany.

Dr. Pearson has reached a very natural conclusion, and that is that the initiative to wipe out this stain upon American progress must come from *within* the profession. Facts have accumulated bearing sufficient force to convince intelligent stockmen of the economic wisdom of providing independent veterinary

schools properly equipped to produce men in sufficient numbers capable of protecting the vast wealth of the live-stock industry; and veterinarians are the proper ones to place these facts before the public, who might otherwise indefinitely fail to appreciate the incalculable losses which it sustains through its failure to provide such means of defence.

No one in this country is better qualified to inaugurate such a campaign of education than the distinguished head of the Veterinary School of the University of Pennsylvania, and he has taken up the work with that earnestness which characterizes all of his efforts. It is easy to follow his leadership, because it is well directed and usually terminates successfully. It is intelligent, logical, and conservative; it has reason, argument, and nobility of purpose for foundation, with success as the goal. Therefore every earnest veterinarian should second this magnificent effort by giving the facts collected by Dr. Pearson as wide publicity as possible in places most likely to bear fruit, adding to them whatever of argument and incident which will tend to accomplish the great object in view.

SAN FRANCISCO VETERINARIANS PROSPEROUS.

When the great disaster of last April befell the beautiful City of the Golden Gate, it seemed impossible to get any tidings from our veterinary brethren, and it could only be conjectured through the harrowing accounts in the newspapers that they had participated in the general disaster. Many of them undoubtedly did suffer considerable losses, but it appears that none were rendered destitute through the conflagration and seismic disturbance.

Dr. Wm. Dougherty, of Baltimore, who is always first in rushing to the aid of unfortunate veterinarians, raised a little fund on the spur of the moment and forwarded it to Dr. Archibald R. Ward, of the University of California, with instructions to destribute it among needy veterinarians in San Francisco. After diligent inquiry and search Dr. Ward was compelled to return the amount to the donors, as none were found. In a letter to Dr. Dougherty,

Dr. Ward says: "Dr. Haring took up, before a meeting of the State Veterinary Medical Association, the matter of the distribution of the relief fund contributed by yourself and other Baltimore veterinarians. The discussion brought out the fact that there were no destitute veterinarians in San Francisco. They could not suggest the address of any individuals who might properly be recipients of this fund. Dr. Wm. F. Egan gave me a list of veterinarians, among them men worth hundreds of thousands of dollars, and I wrote letters to eight of the poorest of these, but none of these have answered and several of the letters have come back through the mail for want of a better address. I have exhausted my ingenuity in searching for veterinarians of San Francisco who are in destitute circumstances."

The REVIEW congratulates the profession of San Francisco upon its fortunate condition, and we know their brethren everywhere will rejoice at the good news.

INSPECTION OF FOOD FOR THE ARMY.

The comprehensive article in this number of the REVIEW detailing the very thorough inspection of meats and meat food products intended for the U. S. Army, reflects much credit upon those officials charged with the direction of the Subsistence Department. Written by a member of the force of inspectors, who is conversant with the work, and whose accuracy can be relied upon, we take it that, young as the service is, it will compare favorably with that of the armies of countries which boast of superior discipline and organization. Dr. Hughes' narrative will be read by Americans with pride, and should prove an incentive to army authorities to greater effort to bring the Army Veterinary Service to a position somewhat in keeping with the Department of Subsistence.

ATTENTION is directed to a new department inaugurated this month in the REVIEW under the title of "Modern Veterinary Methods." The purpose of this departure is set forth in an introductory note, and we believe the series of short articles outlined will be most helpful to practitioners.

ORIGINAL ARTICLES.

INSPECTION FOR THE U. S. ARMY.

THE SUPERVISION OF THE PREPARATION OF MEATS AND MEAT FOOD PRODUCTS FOR THE AMERICAN SOLDIER.

By D. Arthur Hughes, Ph.D., D. V. M., Cornell University.

Some forms of our professional service give opportunity for open display of skill and call forth the plaudits of onlookers. Other forms of our work in which there is no chance for show or ostentation, yet which may be of far greater value to mankind than that exhibited in the exercise of skill on an individual domesticated animal, go unrecognized. The supervision of the preparation of meats and meat food supplies for the United States Army, work which has been assigned to veterinarians in recent years, has made no noise in the world, yet the statement may be ventured that, in the prevention of disease in man, in its prohibition of the use, for army supplies, of meats or meat food products unsound, unhealthy, unwholesome or unfit for human consumption, the professional supervision of the preparation of those supplies has been of immense value to the thousands of men in the regular army, as well as to men of the regiments of State militia who go into encampment with the regulars in summer manœuvres, and receive much the same rations as United States soldiers. Much of the best scientific work of the government, indeed, for the accomplishment of which many highly trained men are employed for the public benefit, is not mentioned in the lay press, and sometimes is not well known in the scientific world. Yet considerable character may be necessary that it may be efficiently done. In the case of the inspection for the United States Army, of which I am to speak, this efficiency is abetted by the austerity of the staff officers who supervise it, by a hearty desire on the part of the inspectors to serve the people, and by a warm personal loyalty to the soldier in garrison and field, a stirring patriotism which touches the character of the men who have it in charge.

This particular inspection is eminently useful to aid in the protection of numerous lives. The experience of the armies of the world shows that more deaths occur from disease than by the bullet. Disease is engendered in the army in war time by the exposure and ever-changing environment of the men, or, maybe, by improper food or drink. The experience of the Japanese in the Russo-Japanese war, as reported by Major Seamons of our army, shows that, by attention to hygiene, the terrible decimation of disease may be greatly reduced. The disasters from the bullet, and disease in camp, must be looked to at the front by the officers of the line and surgeons of the regiments. The matter of proper food supplies for the regiments can largely be attended to at home, from which most of the food supplies, in the case of our own army, are likely to come.

The inspection of food supplies for our army affords protection for the soldiers in garrison or field, whether on duty here or in our tropical dependencies.

It is doubtful whether any civilized country in modern times has realized more fully the necessity of a strict supervision of the preparation of meats and meat food products for its soldiers, or made a more complete provision for their inspection during the whole course of the preparatory processes up till the very moment of shipment, than has ours. Quietly, unostentatiously, for a number of years, unknown to the mass of the American people, unknown probably to a multitude of men in the army, unknown even to the great majority of medical men, there has been going on, at several of the great packing centres, an exceedingly close inspection, during all preparatory stages, of meats and meat food products for the American army. The work has been done, and is being done, by veterinarians stationed at the centres from which most prepared meats for the army come, acting under United States Civil Service rule, in the employ of the War Department, and devoting their entire time to the work under immediate orders from staff officers of the regular army, detailed usually as purchasing Commissaries

of the Subsistence Department, and stationed in the same localities.

To be properly done the work calls for knowledge of packing house industries on the part of the inspector—the industrial side of the work; a practical knowledge of the veterinary sciences—the scientific side; the supervision of the performance of many business matters—the business side; besides, there is a personal side, for, though the inspector has some leaway for judgment, he looks to the officers for final orders. We may, then, in this paper, look at all sides of the work, and the responsibilities which may accrue in its performance.

I. THE INDUSTRIAL SIDE.

The prerequisite for an understanding of army inspection—Fresh and prepared meat foods for the army—The kinds of meats and meat food products required—The aim of the inspection—The specifications.

For success in inspection of subsistence supplies for the army a first hand knowledge of packing house industries, not so much bookish as practical, is necessary. That is to say, the prerequisite for an understanding of the preparation of meats and meat food products for the army is a preliminary knowledge of all details of packing house industries in so far as they touch army orders for supplies.

For the most part the inspection, of which we are speaking, does not concern itself with fresh meats, or with the numerous prepared foods other than meats and meat food products. True, the Subsistence Department of the army has an excellent veterinary inspector, Dr. Loveberry, in San Francisco, through which port a very large part of the supplies for our troops in the Philippines go, and he, under the direction of Major Krauthoff, Chief Commissary of the Department of California, carefully examines the bulk of the refrigerated meats sent from this country to the islands. But, in general, fresh meat supplies for the soldiers are obtained by purchasing, in or near the place where the troops are located, live animals in small or

large droves. These are bought, examined before death and after death, under strict rules laid down in the army regulations. Fresh meats in the form of halves, quarters or cuts, in small quantities, may be purchased in the neighborhood of a fort or camp, but only when the purchase tallies squarely with the precautionary rules of the Subsistence Department of the army. As the veterinary inspection for the army at the packing centres does not, for the most part, at present, concern itself with fresh meats, so also it has nothing to do with many other prepared foods needed for the army sustenance. A great variety of subsistence stores are needed by the army, with many of which the veterinarian, as such, has little or no concern. But the veterinary inspector serving the Subsistence Department, as a food specialist, is apt to become interested in food supplies, or provisions as a whole, perhaps, for instance, coffee, flour, canned goods, as many of the practical questions, chemical and physiological, on preservatives, adulterations, discolorations or defects, are those which concern him in his own work.

The kinds of prepared meats and meat food products required for the army are enumerated in Circular No. 9, office of the Commissary General, of November 19, 1901, and in the printed blanks of "Proposals for Army Supplies" sent to responsible parties expecting to bid for contracts to supply the army with necessary subsistence stores, as advertised in public places by the purchasing commissaries. They are, first, dry salt meats in crates or cans for the tropics, the Philippine or Hawaiian Islands, Porto Rico and possibly Cuba. Those in crates are 10 to 16 lb. bacon bellies or 12 to 16 lb. hog hams. Those in cans are 10 lb. average weight bacon in cans each containing 9 lbs., or 10 lb. average bellies in cans each containing ¾ of a lb. of bacon. Second, dry salt meats for United States posts, which are 10 to 20 lb. bacon bellies in crates. In addition dry *sweet* cured bacon bellies, 10 to 16 lb. average, have sometimes of late been sent to the Philippines, while light bacon bellies and hams commercially cured, but with extra smoking, are obtained for monthly supplies for United States

posts. They are, third, canned, prepared, (cooked) meats and meat food products, for either the tropics or United States posts; which are as follows: beef, corned; beef, roast; hash, corned beef; hash, fresh roast beef; chipped beef; lard; oleomargarine; Vienna sausage; beef, tongue.

The simple enumeration of the meats and meat food products required by the army makes it obvious at once that it is necessary for the inspector to have a knowledge of packing house industries. He must at least know how meats and meat food products are prepared, the stages of their preparation, the different forms of preparation, the processes, the kinds of packages. Obviously the inspector, who is to give trustworthy evidence of the satisfactoriness of any can, box, crate or other package containing any one of these meats or meat food products prepared for the army, must thoroughly understand, first, the methods of handling animals up to the moment of slaughter, and, second, the methods of handling meats and meat food products up to the moment they are turned into the trade. The aim of this inspection is to follow army meats and meat food products from the cutting from the carcass or beginning of manufacture, up to the time the products are crated or boxed ready to turn over to the Quartermaster's Department for shipment. The inspector must follow sedulously the products in such a way that he may be able to certify to their soundness and fitness for human food. His immediate duty, as far as the contracts go, is well marked out for him; but his capability of inspecting after slaughter presupposes a familiarity with all that has been done up to the close of slaughter. For he has to be ready constantly to give opinion, based on his practical experience in the various forms of ante-mortem and post-mortem inspection, as carried on by the Department of Agriculture.

He possesses expert information on the yardage of animals, the killing, dressing, cooling, cutting of the different kinds of animals, and the government inspection of meats before they reach his hands. He is also acquainted with the packing house industries immediately concerned in the preparation of army

meats and meat food products. These we can here only outline.

First, in the preparation of army dry salt meats, he must know well all the details of three stages, the cellarage of the meats, their smoking, and their packing. With regard to the cellarage he must be informed on conditions required when meats are layed down in the dry salt cellars, how the cuts are cared for, the methods of cure, kinds of salt used, resalting and brushing of the meats. With regard to the smoking he must know the methods of drying meats, the woods used for making the smoke, the temperature at which the smoke house is kept. In the packing of dry salt meat for the army he must be familiar with every item in the methods of wrapping, crating, boxing and canning.

Second, as large quantities of canned (cooked) meat and meat food products are required by the army, and big contracts are let for their preparation, the veterinary inspector must needs have exact knowledge of the canning industries in so far as they have to do with the goods needed. In the preparation of canned roast beef he must familiarize himself with all the stages in the work, the cutting from the carcass of the primal parts specified in the contract, the soaking of the meat, the parboiling and removal of extract, the cutting up of the meat and removal of waste, the stuffing of cans, weighing, processing or vacuum work, the lacquering and labelling of cans, boxing and stencilling. In the preparation of canned corned beef the cuts must be known, the pickling or corning in the cellars, the boiling, removal of waste and the later work of canning, weighing, processing and boxing. Different, again, is the industry of making corned beef hash for the army, in which the inspector notes that the same manufacturing process is used as in the preparation of corned beef, except that the corned beef is minutely comminuted in a "hopper" and mixed with onions, potatoes and condiments; nevertheless, he must not miss following every stage of its preparation. In the preparation of chipped beef there must be familiarity with the parts of the carcass used and their preparation by drying and smoking for the next stage of

chipping or slicing in the machines, followed by packing, weighing and boxing. Further, in the manufacture, under contract, of Vienna sausage, the inspector must know the meat materials used, how they are combined, and the machine work in their mixture, the filling of the sausage casings, the stuffing of the cans and the final processes up to the boxing. In the putting up of beef tongues there is a necessity of knowing how they are pickled, boiled, their waste removed, skinned, tested for rancidity, stuffed in cans containing a soup or bone liquor, processed, weighed, boxed and shipped. Nor of the manufacture of lard and oleomargarine must the inspector be ignorant, for both of these food products are required by the army. In lard manufacture he must know the parts of the hog used, the methods of rendering, the use of stearine, the removal of cracklings by straining, the cooling, agitation, drawing off from tanks, canning and weighing. In the manufacture of oleomargarine he must certainly know the ingredients used, their quantity and kind, the methods of churning, pressing, weighing and finishing the product, how it is packed and shipped. In all the packing house industries, in a word, which have to do with the preparation of any kind of meat or meat food product for the army, he must be an expert.

If he is not an expert when he is appointed, he can hardly do otherwise than shortly become adept in all matters of the preparation of army supplies. He becomes so by constant observation of the putting up of subsistence stores for the army by the packers, and by constant, ardent study of the specifications of the contracts which he is duty bound to have carried out. The minutæ of the requirements on the part of the government from the packers, who agree to and sign the contracts awarded to them, are expressly stipulated in each case. As the army is constantly purchasing large quantities of the supplies mentioned, the inspector must of needs become intimately acquainted with all the processes of their preparation. To the end that the government may know what is being done, and that nothing can go wrong, it is agreed by the contracting

parties, that, in addition to the inspection provided for by the Department of Agriculture, a veterinary inspector of the Subsistence Department of the army shall be allowed to follow the meats and animal products in all their preparatory stages. To the end that this inspection may be made, notice must be sent by the packers to the local commissary office; in some cases, of the time when the preparation of meats is to begin, in other cases, the time must be given of the various stages of preparation. As canned goods are put up very rapidly the notice of the time of beginning is usually all that is necessary. But in the preparation of dry salt meats notice must be given: of the dates when the meats will be put in dry salt; of the date of first turning and resalting; of the date of second turning and resalting; of the date when the meat will be placed in smoke; of the date when the meat will be removed from smoke; of the date of packing.

As the inspection proceeds, at the times when goods are being gotten ready, the understanding is that there may be rejection of meats at any stage of their preparation if the specifications are not carried out. The inspector may intervene at any time that things go wrong, or where the work is adjudged not up to the letter of the specifications of the contract. There are standards whereby he can judge whether the product in course of preparation is satisfactory. Samples, representing the kind of goods proposed to be sold to the army, are submitted by bidders. Right is given officers and inspectors to open packages to examine them for quality, weight, carefulness of packing, and whether the product is up to the standard of the sample submitted. These tests are scrupulously made. In the manufacture of supplies it is understood that *fresh* material is all that is wanted. The army assures itself that it gets this: for, in the case of salt meats, every piece layed down in the cellars is seen by the inspector; in the case of canned meats contracts read that canning must not be done until such a time, after the contract is awarded, that the commissary officer can know the time of start and give orders to his inspector accord-

ingly. Inasmuch as, after the packing of canned stuffs, the month and year of packing must be stamped on each can of goods for the army; and be stencilled on each box or crate containing dry salt or canned meats, both the inspector and packer are held responsible if the contents be found wanting in any particular.

II. THE SCIENTIFIC SIDE.

Possible abuses in parts of animals used—The chemical questions—The sanitary questions—Constituents of supplies—Possible failure to use standard products—Cures and curing—Entomology, bacteriology and pathology in army inspection.

The aim of the veterinary inspector for the army, as a scientist, is the prevention, in the preparation of supplies, of the utilization of meats or meat food products which are unfit for army purposes. In the course of the preparation the aim is to prevent abuses which lead to such unfitness.

First of all, there may be abuses in the use, for filling the contract, of parts of carcasses forbidden by its terms. In the canning of roast beef the cuts brisket, chuck, or plate, from young fat cattle must be used, while the same parts from old cows, stags, bulls and light skinny cattle are forbidden, as well as flank cuts from any. In the preparation of corned beef much the same conditions on parts apply, except that instead of one piece of chuck, and one piece of either brisket or plate being allowed to each can, as in case of roast beef, the pieces must be of uniform size, but may be of varied number. In both roast beef and corned beef the meat must be of good color, well trimmed, free from blood clots, skin, sinew, gristle and excessive fat. In the canning of chipped beef, the outside muscles of the thigh are not allowed, only the inside muscles and "knuckles." Beef tongue cans must have only one two-pound tongue in each can, no pieces, and the tongue must show no evidence of stomatitis, nor blood clots, and must be of good uniform color. In the putting up of Vienna sausage an oversight must be had of the kind of meats taken from the pickling

vats, the proportions used, together with a supervision of the comminution of meats in the machines to see that no parts or portions are used deleterious to health.

Again, in the preparation of barreled supplies, mess pork and oleomargarine, miscellaneous questions may arise. Oleomagarine manufacture is conducted usually with the greatest regard for cleanliness. Yet abuses may arise in the manufacture and the inspector should know the grades of the product, and must see to the contents of barrels, and judge quality by taste, color, smell and firmness. In mess pork barrels he should judge upon the cuts and age of the contents, as there are stipulations requiring recently made products, definite number of pieces to the barrel and wholesome meats.

In the cutting of hams and bacons, to be latterly shipped in crates to the tropics or United States posts, abuses may arise which must be headed off. Hams must be cut two inches from the "aitch" bone (ileum and ischium) and shank cut off above the hock joint (femero-astragaloid), without exposing the marrow of the femur. They must be closely faced and both the cushion and flank sides cut close, butt ends well rounded and cut under, making symmetrical contour or well rounded hams. The hams must be from light, prime hogs in good condition and must weigh not less than twelve, nor more than sixteen pounds. That is, the hams must be free from contusions or wounds, fresh, well bled out. Again, in the cutting of 10 to 16 pound bacons for the Philippines, or 10 to 20 pound bacons for the United States posts, the specifications in the contracts are specific and abuses must be watched for. The only cuts allowed are bacon bellies, and in no case, when the bellies are layed down as green (fresh) meats in the cellars for salting, must any piece exceed or be less than the stipulated weight. The bacons must be square cut, free from black pigmentation of the mammary glands, sweet and sound, not too fat, a good streak of lean running through each piece, and not more than two and a half inches thick at the shoulder end. All these provisions must be carried out, and at the same time largesse is

given to the inspector in the words "sweet and sound." The bellies must have no contusion, wound, abscess, or clots, must be well bled out, not from old boars or stags, nor be roughage. The bellies must be absolutely free from lesions of infectious diseases.

The preparation of dry salt bacons to be hermetically sealed, after curing, in nine pound cans, and shipped to the Philippine Islands, involves many such questions as arise in the preparation of dry salt meats for crating. In the cutting, cooling and laying down bacon in the dry salt cellars the judgment of fitness may be made, varying with the interpretation of the phrase in each contract that the meats must be "from light prime hogs in good condition, sweet and sound." Meat, according to the United States Food Standard * "is any clean, sound, dressed and properly prepared edible part of animals in good health at time of slaughter." "Fresh meat is meat from animals recently slaughtered and properly cooled until delivered to the consumer." "Cold storage meat is meat from animals recently slaughtered and preserved by refrigeration until delivered to the consumer." These quotations may serve as guides to the inspector in his selections. No bacons could be accepted unless from animals recently slaughtered, properly cooled, the parts properly cut, of definite weight and shape, free from bruises, wounds, infection or other diseased condition, not unclean, sour, too soft or squashy, in every way in prime condition.

As great quantities of lard are prepared by the packers for the army, the utmost care must be exercised in its manufacture according to order. "Lard," says the United States Standard for Food Products, "is the rendered fresh fat from hogs in good health at the time of slaughter, is clean, free from rancidity, and contains, necessarily incorporated in the process of rendering, not more than one per cent. of substances other than fatty acids and fat." † The army orders require the lard to be *kettle-*

* Standards of Purity for Food Products. Circular 19. Office of Secretary, U. S. Depart. of Agri. P. 5.

† Standards of Purity for Food Products. Circular No. 19. P. 5. Office of the Secretary, U. S. Depart of Agri.

rendered, to be made from fat from the backs of hogs, leaf fat and leaf fat scraps, to contain not more than five per cent. of stearine as a hardener, free from bits of skin, muscular tissue or other sediment, free from dust, dirt, clean in every particular. Abuses are not altogether infrequent in lard making, so the inspector must look sharply into the original fat used, the percentage of stearine added, the kettle rendering as distinguished from steam rendering, the straining after rendering and the general cleanliness of the whole process.

Besides the possibility of the use of parts of carcasses excluded by the terms of the contract, certain chemical questions may arise for settlement. In these, as in all scientific questions, the inspector is a referee and should use the professional information at his command for the good of the service. The aim is to exclude what is forbidden and what may be deleterious to health.

Under the new federal meat inspection and pure food laws there is little chance left for the use of dyes, chemicals or preservatives, in meat packing, hurtful to human health. Besides, the terms of the contracts are so explicit, and the inspection for the army is so sharp, that few abuses are likely to arise in the preparation of meats for the soldiers. Nevertheless, there is nothing amiss if the inspector is alert in all matters relating to the determination of preservatives which have been used in meat preparation, and in the determination of artificial colors hitherto, at least, used in the trade. In the preparation of army dry salt meats the only chemical actions allowed to further preservation are those of clean American (Henderson usually) sodium chloride and the creosotic effects of wood smoke. In some cases brown sugar (saccharose) may be used together with sodium chloride; but in all cases saltpetre and boric acid in any amounts are excluded. As the liquids used in the vats for pickling meats are now subject to analysis, the constituents being definitely known to the officers of the government, through the agency of analytical chemists of the Bureau of Animal Industry stationed in laboratories at the packing

centres, there is little danger that corned beef, so much of which is bought by the army, will be hurtful. In sausage making, again, the pickle used as a preservative for the meats before they are comminuted, is subject to government analysis. Sulphites are forbidden and the government specifies the kinds of vinegars and amounts of saltpetre which may at present be used. All the processes of sausage making are under the watchful eye of officers. But be the contents of cans ever so well looked after, poisoning may occur, and often enough does occur, from the chemical action of the contents of a can on the tin, or from poisonous injurious substances coming in contact with the contents of the can. The withdrawal of air from cans, and the sterilization by heat of the contents, destroys all micro-örganisms and prevents putrefaction and the possibility of ptomaine poisoning. Nevertheless, the Department of Agriculture, to exclude possibility of poisoning from chemicals, makes provisions for containers: these refer to the thickness of the tin, the injuries which may arise if poisonous, chemical substances by any fault coming in contact with the contents, especially if lacquer, through rusting at any small point, should come in contact with the meat; in the latter case chemical action and bacterial action unite to render the contents putrid. "If the tin plate is lacquered, the lacquer completely covers the tinned surface within the container and yields (should yield) to the contents of the container no lead, antimony, arsenic, zinc or copper or any compounds thereof, or any other poisonous or injurious substance." * These are some of the chemical questions which may arise, and are at any rate involved, in army meat inspection.

The main point is, that a practical knowledge of preservatives is necessary. The inspector should know what they are, how used, their effect on the taste and appearance of meats. This presupposes a knowledge of harmful preservatives such as salicylic acid, benzoic acid, boric acid and borax and formal-

* Standards of Purity for Food Products. Circular No. 19. Office of the Secretary, U. S. Depart. of Agri. P. 6 footnote.

dehyde and their detection, as well as the detection of such artificial colors as coal tar dyes, copper, turmeric and caramel.

It also presupposes a knowledge of harmless preservatives, what they are and the standards for several of them. This implies a knowledge of the chemical action of the drugs on meats and a knowledge of the changes in the physical appearance caused by them. Analyses may not be expected to be made by the inspector. But a practical knowledge of the preservatives and their effects is necessary. The veterinarian may be a consultative and advisory officer in these particulars. He is engaged in the duty of aiding in the preservation of health of men in the army and bears a relationship to the pure food movement which has lately been effective in this country. His purpose, as an official for the army, is to exclude the use of harmful preservatives, though it is unlikely that they would be used as they are practically forbidden by the contracts. The army is aided in this protection against noxious drugs, or noxious foods preserved by drugs, by its own inspectors. They are on the spot with expert information watching every bit of the material put up for the army and, if it were necessary, could head off harm. They are there to guarantee the army pure food. Fortunately, as I have said, the work is now aided by the chemical laboratories set up at the large packing centres by the Bureau of Animal Industry. In addition a knowledge of the usual contents of commercial cans—of meat or meat food products—may now be obtained by consultation with practical inspectors, recently placed in the canning departments in the employ of the Bureau of Animal Industry, men who have had large, practical experience in that particular industry.

Inasmuch as the inspector for the army looks after definite lots of meats purchased by the government, and must follow them in the course of their preparation, he can afford to be a little more autocratic in the supervision than under ordinary circumstances, particularly as the responsibility for their proper

preparation comes directly upon him. He therefore sees that they are sanitarily handled.

Indeed, he receives direct orders from the officers in charge to that effect. He can pass upon the places where meats may be put, whether trucks are satisfactorily clean, he can stop a person of filthy appearance from handling his supplies. In the wiping and brushing of dry salt meats he must require proper cloths or brushes. He must see that meats are not placed on the cellar floors, but on racks. He must see that in no part of the cure water touches bacons or hams; and that in all the processes they are kept free from dirt or filth. He has charge of the sanitary handling of pickled meats in the cellars which are to be made into army corned beef. In the canning processes he must see to the sanitary handling of contents of cans, and even of the cans themselves; forsooth he must know that the cans are free from dust or grime before meats can be packed in them.

Under so rigid an inspection there can hardly arise abuses in the constituents of the supplies. Nevertheless, the inspector must be sure that an abuse of that kind cannot creep in. In lard making he should see the amounts and varieties of fat used, exclude adulterants, note the percentage of stearine used and forbid excess. In oleomargarine making, whenever he has a supply to attend to, he is required to study the constituents of the supply, the processes of making, the color, taste, freedom from rancidity. There is little likelihood that in these industries, nor in any other, the packers would attempt anything underhanded in the preparation of army supplies. Still it is the duty of the inspector to be certain that nothing occurs to lessen the food value of the standard product required to be put up, and a quantity of which was submitted as a sample when the purchase was made by the commissary officer.

That, if it were necessary, he may be able to prohibit the use of other than standard products, a practical and scientific knowledge of the changes which meats undergo under various circumstances is necessary. It has been said that there has

sometimes been a tendency to use poorer grades of meat for manufacture into food stuffs which bring higher values. Information is therefore needed by the man who inspects, on parts, cuts, odor and appearance of fresh products; and the color, odor, and general appearance of aged meats. The inspector should know the appearance of old, deteriorating meats, odor of unsound meats, the possible frauds which might be practiced. He should know the changes which meats undergo during refrigeration, the ripening of meats, moulding—that is, the action of cold, bacteria and fungi. It is well known, for example, that great danger appears when refrigeration is slackened in fresh meats, bacterial processes are set up, followed by decay of the meats and an insufferable odor. Such meats are unfit for human food, and if consumed, bring on severe indigestion and violent diarrhœa.

The questions of cures, and the curing of dry salt meats, bring in many scientific points practically applied. What length of cure has to do with preservation, is a matter which has been much discussed. The army adheres to the old fashioned ideas of cure, a long salting in dry salt, six days for drying out and seven days for smoking. Still, the scientist having the care of meats undergoing curing and smoking, will not fail to study the different kinds of cure and their effects, the action of creosote on meats and the details looking towards healthfulness in these processes. The army will not allow anything but maple or hickory wood to be used in smoking; it requires its meats to have a long smoke and a long drying out. Many questions arise here: why these woods and the prohibition of elm wood or sawdust, the effect of smoke as a preservative or flavor; shrinkage during smoke; the effect of smoke on meat by absorption from without; the effect of smoke on the body of the meat.

Furthermore, a practical knowledge of entomology has its bearings in army inspection. For example, account must be taken of the destructiveness of the meat or blow fly (calliphora vomitoria Linn.) and the blue bottle fly (lucilia cæsar Linn.)

to meats, and precautions taken accordingly. It is well known that these species of the diptera lay their eggs on fresh meats at any point of exposure and the maggots cause it to become putrid. Again, the bacon burrower has sometimes raised havoc amongst large quantities of bacon, causing their unfitness for food. There are special insect plagues which must be guarded against in packing meats. Hence the army habit of having bacon canned, or wrapped, first of all in two thicknesses of oil parchment paper, with cloth paper between, then stitched in burlap.

The veterinarian, in his capacity of army meat inspector, is not expected at the same time to do the work of a laboratory bacteriologist, though it might be well at times if he could make some bacteriological tests. He should, however, have expert bacteriological information, obtained alike from practical work in the laboratory as well as observations on infections which press home the principles of bacteriology. It is easy for pathogenic organisms to find lodgement in meats through contaminations taking place in the handling of meats unhygienically. Of course this is minimized, in the case of dry salt meats, in the salting and smoking processes; and, in the case of canned goods, by the heating in the retorts. Nevertheless too much care cannot be exercised in keeping the meat clean. It has often been noticed by canning room foremen that the evolution of gas, from the presence of saprophytic organisms, often takes place if, through any contingency, bad meat should get into the cans, even though the cans have been in the retorts; why, nobody knows. In this way the cans "blow up", that is, swell and burst, as may be the case also if the tiniest of holes lets air into the cans. Here again the duty of the inspector is to exclude the possibility of harm, for the sake of the health of the soldiers and the protection of public property. Should any cans go wrong after they have become public property, the packers must reimburse the government. If many cans went wrong, a measure of responsibility rests upon the inspector. As the packers must guarantee that canned goods

will remain wholesome for a year, it is to their interest to throw out leaky cans, reprocess them, driving out the air, and make them fit for sale. They will not intentionally place contaminated meat in cans. But the work must be watched by the expert, alike to protect the soldiers and himself.

Harm from other pathological considerations to army meats is minimized by the excellent inspection given to all meats in the big establishments by the Department of Agriculture. In the inspection of each piece of meat in lots set aside for army supplies, the army inspector must usually reject pieces showing bad blood clots, offensive contusions or wounds or abscesses, as each piece must be wholly sweet and sound. Sometimes hams, for instance, after strict care, in the inspection when they are cut from the carcass, show, at the close of the smoking, a puffed condition under the skin near the femero-astragaloid joint, due to saprophytic organisms within the ham bringing about an evolution of gas. All such puffed hams must be rejected, even though sticking with a steel tester on the face of the ham discloses no odor. These hams are foul within, especially in the region of the ischio-femoral joint. Under no condition can a piece of meat in a pathologic state be accepted.

III. THE INSPECTORS FOR THE SUBSISTENCE DEPARTMENT OF THE ARMY.

What the kind of work demanded—How inspectors are appointed—The beginning of the work—Its extension and present scope—Object of the work.

Evidently inspectors, who were to be appointed to do this work for the army, must be veterinarians experienced in the various branches of the packing house industries. When the War Department, some years ago, decided to institute such an inspection for the protection of its stores, put up at the packing houses, against possible fraud, it was no doubt seen: first, that the inspectors must be trained veterinarians, understanding the live-stock trade, breeds of animals, their grades, the methods of handling them in the great centres, the diseases of animals and

their detection, the grades and kinds of meats; second, that the inspectors must be accustomed to the packing houses and must have some familiarity with packing house industries; third, that they must be responsible, trustworthy men, acquainted with the federal inspection as it had been carried on by the Bureau of Animal Industry for years, and who could be counted on to follow implicitly orders coming from Commissary Officers of the Subsistence Department of the army who would have charge of the work.

How are inspectors appointed? From the Civil Service list. The Commissary General of the army at Washington makes application to the Secretary of Agriculture for an inspector from time to time as necessity demands. The Secretary of Agriculture refers the matter to the Chiefs of the Bureau of Animal Industry, who, through the Secretary of Agriculture, recommend a man to the War Department. The Commissary General then sends official notice to the Inspector of the Bureau of Animal Industry who is recommended. If he assents, the requisition is made for him by the Commissary General, he sends in his resignation, in official manner, from the Department of Agriculture, to take effect the day he gets his new commission from the War Department. Shortly his commission arrives, he is ordered to his new station, and proceeds to the place designated. This is one of the methods of transfer and promotion, the inspector, in both Department of Agriculture and War Department, remaining on the Civil Service list, and submissive to its rules based on the Civil Service law. The inspectors for the Subsistence Department of the army have, in each case, therefore, served faithfully several years in the Bureau of Animal Industry, Department of Agriculture, and have been recommended as fit persons to carry on the inspection for the army.

At first, inspectors were appointed only at Chicago and Kansas City, the first and second largest live-stock centres in the United States, from which naturally most of the prepared meats and meat food products for the army came. This was

five years ago, Dr. C. W. Johnson, being assigned to Chicago under orders from the Purchasing Commissary of the army there, Dr. McKinney at the same time being ordered to Kansas City under the direction of the Purchasing Commissary at that place. The merit of these men, and the value of their work, encouraged the Subsistence Department to make other appointments.

In the spring of 1906 came the extension of the work to its present scope. Dr. G. A. Lytle was appointed at Chicago, because of the increase in amount of work at that point; Dr. D. Arthur Hughes at Omaha, the third largest live-stock centre, Dr. C. Loveberry at San Francisco, to inspect meats prepared in the region, and fresh meats shipped by transport to Manila. At present there are five inspectors; two in Chicago, one in Kansas City, one in Omaha, and one in San Francisco.

The object of the inspection is to supervise the preparation of all meats and meat food products for the army. It may be alleged that the inspection for the army is a duplication of the inspection carried on by the Bureau of Animal Industry under the new laws. This is true only in small part. The army inspector has direct orders on definite contracts. He is the special agent of the War Department appointed to watch the preparation of its stores and to see that they are beyond reproach. The appointees have special preparation for efficiency in the army work, by reason of experience in the inspection of the Bureau of Animal Industry; they fall into the new work with ease, and probably are valued because of their professional judgment and advice.

IV. THE BUSINESS SIDE.

The duty of the inspector in business matters—How he is held to duty—What the business matters are—Reasons for care in preparation of stores for shipment—The business responsibility.

On the business side, the purpose of the inspection is to sternly require that all details of the contracts for supplies, entered

into between the United States Army and the packers, should be fulfilled by the packers entering into the agreement. The inspector in his work is the representative of the Subsistence Department, acting under direct and immediate orders from the commissary officer of the army in the city in which he is stationed, in the business matter of the preparation of meats and meat food products under contract for army supplies. He is, therefore, charged with the responsibility of seeing that all specifications expressly laid down in the contract, to which the packers have given their hand and seal under bond, are carried out by the company concerned.

If the packers are bound by the terms of the contract, so also the inspector is held to his duty by certain securities. These are, first, his oath of office, in which he swears allegiance to the United States and to the special business of the War Department, which it is his duty to perform. Copies of this oath are kept at the local office where he takes it, and at the Commissary General's office in Washington. This binds him at the beginning, indeed, all through his work. Second, each box or case of goods, the contents of which he has inspected, has his stencil mark thereon. On the top of each box is lettered in India ink or lamp black, words much as follows: "Inspected, C. W. Johnson, Inspector, U. S. Subsist. Dept., No. 1." Whereever such a box and its contents goes this is a mark of reference and publishes his duteousness or induteousness. Third, after the contract is filled and the stores are ready for shipment, the inspector gives a certificate of inspection to the government, which is in effect an affidavit that the work is properly done. Here I may append a copy of the inspection certificate furnished for dry salt meats, to show the seriousness of such a document if its representations are false:

(FORM NO. 10.)

INSPECTION CERTIFICATE.

I, John Smith, a duly appointed inspector of meats, in the city of Chicago, County of Cook, State of Illinois, do hereby certify that, at the request of Captain , C. S., I inspected, on the day of , 190 , the provisions below enumerated, purchased as supplies for the U. S. Army, of Swift & Co., by Captain , C. S., U.

S. A., and found them to be in quantity and quality as follows: 100 crates Bacon, issue , Gross wgt. , Net , Tare , Cubic measure , Inspector's stencil, No. 6.

The above described lot of bacon was dry salt cured, was in process of cure for 30 days, during which time it was turned and resalted on the following dates , 19 . After curing, the meat was brushed with a dry brush and has not been soaked, dipped or washed. Each piece of meat in the lot is from light prime hogs in good condition, well cured, sweet and sound, was allowed to dry out while hanging for 3 days, then was thoroughly smoked in dry smoke from hickory wood (not from sawdust) from , 190 , to , 190 . In addition the meat was allowed to dry out from to . In addition to the above, I further certify that all other requirements in the specifications of , 190 , and your circular of Nov. 19, 1901, have been complied with, that to the best of my judgment and belief the product referred to herein is from carcasses free from disease, and was inspected in accordance with the Rules and Regulations for the inspection of live stock and their products, promulgated by the Secretary of Agriculture, and is wholesome, sound and fit for human food.

JOHN SMITH, *Inspector.*

(SIGNED IN DUPLICATE.)

Dated at Chicago, Illinois,
this day of , 1906.

NOTE.—This Certificate should accompany the voucher on which payment is made for the stores herein referred to.

Duplicates of this, and all certificates, are made out, one being kept on file at the local office, the other sent to the office of the Commissary General at Washington. Knowing that this certificate must be given, there is a greater zeal in seeing that the contract is properly filled. If at any time it is shown that the goods are not what they are represented to be, the charge would be a serious one. These three securities stir the sense of duty of the inspector and make him vigilant in the business of food preparation.

The inspector is charged not only with the prevention, in food preparation, of anything occurring which would be detrimental to human health, he is also charged with many business matters which are the concomitant of the scientific inspection. The specifications of the army contracts are, beyond controversy, definite on all matters, not only on what the meats and meat food products shall be, and how they are to be prepared, but how they shall be put up for shipment. There are definite instructions, in the case of dry salt bacons and hams to be put up

in crates, on what shall be the wrappings of the pieces, the number, size, and average weight of pieces to be in a single crate; the length, depth, breadth and thickness of the crates, the kind of nails, the width of iron straps to be put around the crates for their protection, the shipping marks, and where they shall be placed. When dry salt bacons are to be canned there are instructions on the total weight to be in the can, the number of pieces to be placed therein, the size of the cans, their lacquering and labelling, as well as all the details on boxing. In the case of cooked meat foods, or meat food products, there are specifications on amounts to go in a can. their size and weight, the way the meat shall be packed (whether by machine or hand), the lacquering and labelling of cans, number in a box, together with the details on shipping marks.

On the business side of the work the detailed orders must be carried out in their minutæ. If, though, there are two points upon which most emphasis is laid, they are the marking of boxes for shipment, and the ascertainment of exact weights. Perhaps the marking of army meat boxes may interest the curious. I, therefore, give the usual method of marking a dry salt meat crate.

TOP OF BOX.

To whom assigned.....
Number, pieces, weights, cubic measure.....
Inspector's stencil.....

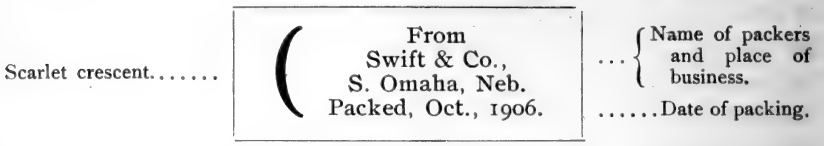
Depot Commissary,
Manila, P. I.
No. Pcs. Gross Tare Net
Cub. Meas.
Inspected
D. A. H.
Inspector U. S. Sub. Dept.
No. 1.

ONE END.

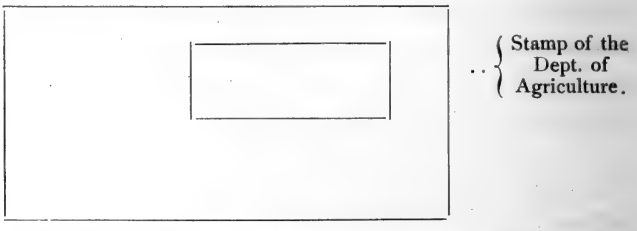
Scarlet crescent.....

Bacon, issue. Dry salt cure.
U. S. Sub. Dept.
T. B. H.
Packed, Oct., 1906.

..... Product.
.. { Depart. and initials of Commissary.
.....Date of Packing.



ONE SIDE.



There are good reasons for this care in marking crates and boxes. If everything is specified, the packers can turn out neater packages. Since their name appears on the crates and cases the stencilling will be of advantage to them, as the packages are often sent to countries where American goods are just being introduced. There are other reasons. The officers are allowed, by the information furnished on cans, to check that information with the actual value, taste and quality of the goods; and be able by their label and marks, to refer back to their origin. It is a protection to have definite marks. If there is any criticism of the goods the marks show their origin. The marks are an assistance to commissary sergeants in checking up the shipment when it is received.

There are also excellent reasons for care in the matter of weights. The army pays for its meats and meat products by the net pound. The inspector must use every care to see that nothing of what is ordinarily called tare, wrappings, cans, boxes and the like, is included in his final weights for net. However, he is required to determine the individual and total gross and net weights and cubic measure. He sees to these right conditions in preparation for transit as it is necessary for the Quartermaster's Department of the army, which has charge of transportation, to have this data as information in shipping either

by car or army transport vessel. The details of weights and measures of the consignment of meats must be had from him for the benefit of the clerical force of the commissary office. Determination of exact net weight must be had, as known to the inspector as representative of the commissary office and to a checker at the commissary depot, before vouchers can be made out for payment of the packer. The inspector in all this work is not only a protector of the health of the American soldier, but a guardian against intentional or unintentional defrauding of the United States treasury.

The situation in which the inspector for the War Department finds himself is not altogether an easy one. He is the business representative, as well as the scientific representative, of the commissary officer in the city in which he is stationed. He deals directly with the highest officials of the packing companies on all points of business connected with the fulfillment of the contracts. The complete responsibility is in the hands of the United States army officer of the Subsistence Department, and to him he looks for all orders. Yet the work, on the inspector's part, calls for business astuteness, equipoise and good sense.

V. THE PERSONAL SIDE.

Upon whom the efficiency of the inspection depends—The regulations for the inspection—The manner in which the work is conducted—The commissary officers in charge, their intelligence and character.

The inspection would be of little account, and would be of little force, if it were not for the United States Army officers who have it in charge. The efficiency of the service is due to the character of the officers who have charge of the work. The work is their work in its conception and in its conduct.

There are certain regulations under which the inspection is conducted. The work is done under the rules of a code of regulations issued in the form of a printed circular letter emanating from the Commissary General of Subsistence of the army, together with rulings printed in "Proposals for Army Supplies"

issued to those who bid to fill contracts. Too much cannot be said of the definiteness, simplicity, cogency and clearness of the printed requirements, which are binding alike to the contractors and to the inspectors, who see that no specifications are overlooked in the filling of the contracts.

The manner in which the work is conducted under orders from army officers is worthy of notice. The idea of discipline and high sense of duty, which prevails in all army work, and in all work with which the commissary officers have to do, prevails in all the business connected with the furnishing of subsistence supplies. The fidelity to trust, the painstaking of the army officers, is indeed admirable and inspiring. The work is done with that exactness, that obedience to orders, characteristic of military men. On the interpretation of points of order, there is no humming and hawing. If there is any fault in the carrying out of a contract, there can be no excuse.

The commissary officers in charge of the work are officers of the regular army who have been detailed from the line to the staff as commissaries in the Subsistence Department at Large for the purchase and distribution of subsistence stores. The gentlemen responsible for the proper appearance, quality, and shipping condition of the bulk of prepared meats for the army are: Lieut. Col. A. D. Kniskern, Deputy Commissary General, at Chicago, Major C. R. Krauthoff in San Francisco, Major C. P. Stivers in Kansas City, and Captain T. B. Hacker in Omaha.

All officers are detailed to the staff as commissaries because of peculiar fitness for the work. They bring into it that austerity to which they have been long accustomed in the line. They are under much of military rule, though they are detailed "at large" for the special purpose of furnishing subsistence supplies to the army in garrison and field. They have received a special course of instruction under commissaries doing duty in the purchasing of subsistence supplies before they are themselves, in their turn, assigned to that kind of duty. They have had long experience as commissary officers in garrison and field before their assignment to special duty as purchasing commis-

saries takes place. They are therefore particularly well versed in all the requirements for the army, and are, in large measure, experts in the judgment of foods, particularly the needs of the American soldier.

A good deal of the best work of the world is done quietly, without much talk, without theatricality. We are apt to think sometimes that that is of no importance which is not printed in italics or red ink. No worse mistake could be made. The supervision of the preparation of meats and meat food supplies for the army, under orders from its officers, belongs in that class of work which has hitherto never been mentioned in medical literature. Nevertheless it should be given a high place in the records of preventive medicine because of its protection of human life against ills possible through impure foods. The American people rightly have, for the officers of their army, respect and admiration. Never was their high character, never was their sense of duty more conspicuously exhibited than now, in the preparation of army food supplies.

PENNY WISE, POUND FOOLISH.—We heard on the street the other day of a man who claimed he was too poor to take his home paper, but all the same he read a notice in one of our county papers, telling how to prevent a horse from slobbering, and sent $1.50 for the receipt. When the $1.50 worth of information came it said: "Teach your horse how to spit."—*(Spencer, Oregon, Journal.)*

A NEW REMEDY FOR ECZEMA.—The Emergency Laboratories of New York City have been crowded with sufferers from eczema, who have called to procure a supply of poslam, the new drug which has created such a stir among the medical profession generally since its discovery by Dr. C. T. Cox, the eminent bacteriologist, a few months ago. A large number of cures have been reported. The Emergency Laboratories, located at 32 West 25th street, New York, by special arrangement with Dr. Cox, will continue to supply experimental treatments of poslam free of charge to every one who calls at the laboratories or writes to them for it. The itching is allayed with the first application, healing sets in immediately, and chronic cases are cured in two weeks.—*(Associated Press Dispatch, Nov. 7.)*

THE VALUE TO THE NATION OF VETERINARY SCHOOLS.

By Leonard Pearson, Philadelphia, Pa.

A paper read before the Pennsylvania State Veterinary Medical Association, March 7, 1906.

President Eloit has said: "It is a disgrace to organized education that any nation should refuse, as our own people are so apt to do, to learn from the experience of other nations; the schools must have failed to teach history as they should have done."

The American people have been so greatly favored by a virgin, fertile soil, by great natural stores of wealth, by kindly climates and by the absence of a hostile frontier that, as a nation, they have not yet been driven to a severe struggle for existence and to the development of habits and practices of economy, or to careful husbanding of their resources. The typical American method is that of the miner rather than that of the husbandman. The husbanding of one's estate—husbandry—is in direct contrast with the exhaustion of the rich stores of nature without replacement—mining.

Our great progress as a nation is largely due to the profits derived from turning into cash the bounteous products and stores of nature, the furs, timber, oil, coal, iron and other minerals and, *above all*, *the surplus plant food* accumulated and waiting in the soil for the pioneer farmer. These riches, some of which have been gathering thousands of years, and some of which were deposited ages ago, are rapidly being transmuted into fluid capital and some are already well-nigh exhausted. The fur bearing animals are almost gone, the end of our timber resources can be seen in the near distance, and the limits of the soil areas characterized by surplus fertility are contracting at a startling rate.

The gold dollars that nature scattered so bountifully and covered so lightly throughout the length and breadth of our country have nearly all been gathered. They were gathered

by the lumbermen who chopped down and marketed the noble forests of Maine, of Pennsylvania and of Michigan; they were garnered by the tobacco growers and the cotton planters who formerly tilled the virgin fields of the South, many of which are now half exhausted and some of which are barren; they were gathered by the early settlers on the rich and seemingly exhaustless lands of the middle West, where it was possible to grow wheat or corn on the same land year after year, without intermission, for a generation, but where it is now necessary to follow an appropriate rotation of crops and to have a care for the restoration of the elements of fertility; they were gathered by the cattlemen and sheepmen who owned the vast herds and flocks that formerly ranged over the unoccupied lands of the far West, great areas of which have so suffered from exhaustion from over-stocking that they are now practically useless, and the grasses of some districts are believed to be permanently destroyed. *This system of mining natural resources is very different from the art of the husbandman, who makes restoration, in the form of material or tillage, for all that he removes, and under whose skilful hand nature continues permanently to yield her fruits.*

All permanent civilization depends on the conserving work of the husbandman. This fact is gaining recognition in our youthful country. The barren, fire-swept, flood-breeding, drouth-encouraging mountain sides are gradually being reforested, the depleted lands of the East and South are being restored to fruitfulness under scientific and conservative systems of agriculture that have been worked out in the experiment stations and agricultural schools. The semi-arid cattle ranges of the West are being cut up into farms which will yield bountifully.

With all of this development, is it not strange that our country continues to tolerate a loss of from $200,000,000 to $250,000,000 each year from diseases of animals that ought to be prevented? *Why is this loss permitted to continue?* Why is this tremendous leak unchecked? *In the first place*, there has been in this country such an unparalleled amount of natural

wealth that, with all of our wastefulness, enough has remained to meet the requirements of our population, and so a continuing loss great enough to seriously incommode, if not to distress, one of the great powers of Europe, has been permitted to go on year after year without hindrance. *In the second place*, the loss has been so scattered that it has not often fallen with crushing force upon a single locality, although great numbers of individuals have been sadly injured. *Thirdly*, the veterinary profession has not been sufficiently insistent on the importance and advantages of its work, and so the public has not been strongly enough impressed by the importance of veterinary work to furnish, or to demand from the public treasury, adequate funds for its proper support and development.

Another reason for the tardiness of our development as a profession, and of our institutions, is that on account of our distant position with relation to the old centres of civilization, we have a natural barrier against infections from abroad that has protected us to a large extent from some of the more prominent and striking, the explosive, animal plagues of the old world. Indeed, cattle owners have generally failed to recognize the gravity of the dangers that have actually confronted them until the blow has fallen, as, for example, when contagious pleuro-pneumonia and foot-and-mouth disease have prevailed in this country. Livestock owners were so inclined to accept losses from diseases of animals as a matter of course that they did not organize and demand relief from this source of injury. After contagious pleuro-pneumonia had prevailed in this country for ten years, had been rather extensively distributed, threatening the cattle industry of the United States with the direst calamity, even with partial extermination, as had so recently before occurred in Australia, where it ruined cattle breeding, transforming cattlemen into shepherds; even then the cattlemen made no strong or organized demands for protection until the disease had extended to the West and had reached Chicago, the greatest of our cattle markets. Still the recommendations by veterinarians of the measures that finally prevailed and that

were so brilliantly successful, were, in many instances, opposed by the interests to be benefited and so sorely in need of help.

When foot-and-mouth disease appeared in New England a few years ago, the representatives of the cattle industry were more willing to heed the recommendations of veterinarians and the calamity was averted of loss of foreign trade in live animals and of incalculable damage to our domestic animals at home.

These are achievements that are not fully enough discussed and that are not sufficiently appreciated. *The saving resulting from the extermination of foot-and-mouth disease alone is great enough to build and endow a veterinary college in every state of the Union and to repay, manyfold, all of the funds that have been expended on the work of the Bureau of Animal Industry and the Livestock Sanitary Boards of the various states.*

In European countries, where an animal scourge, as rinderpest, occasionally swept across the land, destroying a large proportion of the horned cattle, or almost completely exterminating them, and where other explosive plagues prevailed widely, there has always been both a keen realization of the destructiveness of infectious diseases of animals and appreciation of efforts directed toward the prevention of such diseases.

And so it was, that one of the earliest measures adopted by the governments of Europe for the relief of agriculture and for the improvement of animal husbandry consisted in the establishment of veterinary schools. *The veterinary schools antedate the agricultural schools* for the reason that the first step in the improvement of animals is to protect them from disease, and agriculture rests largely upon animal husbandry. Some years after schools and laboratories were organized for the development of knowledge concerning diseases of animals, and for its dissemination, agricultural schools came into being.

This country has been very tardy in its recognition of the importance of the veterinary sciences, being, in this respect, *more than eighty years behind Germany, France, and the lesser countries of continental Europe.* Perhaps a reason for the slow development of state veterinary schools, in spite of the great

need of the country for the work of such schools, may be found in the unprecedented development of schools of agriculture and of agricultural experiment stations. Institutions of these classes were organized in every state, and the impression seems to have prevailed that it would be possible for them to take care of the needs of the country with respect to veterinary development and teaching. This, however, has not been the case, and it has long been clearly evident that *veterinary teaching, if it is to amount to anything in a serious and definitely useful way, and if it is to be developed to a point at all compatible with the needs of the country, must have its own separate and specially equipped institutions.* The work of the agricultural colleges and experiment stations has developed so much faster than the income of these institutions that those responsible for their management are constantly appealing at Washington and at the various state capitals for increased revenue. Thus the veterinary sciences have remained in the background, undeveloped and unable to exert their beneficent influences for the protection and betterment of animal husbandry.

Quite recently a change of sentiment has become apparent and veterinary work is beginning to have public recognition. It is now time for veterinarians to make known publicly, generally and forcefully the advantages that will accrue to the state from the proper development of veterinary research, veterinary education and veterinary administration. The limited public veterinary work that has been authorized, has proved its value and serves as a strong argument for further development.

It is probable that in the more civilized countries, great outbreaks of rinderpest, foot-and-mouth disease, contagious pleuropneumonia, etc., etc., are as unlikely to occur as are great outbreaks of the plague or cholera under our modern conditions. New conditions develop or, at any rate, encourage new diseases. *The destructive infectious diseases of to-day are more chronic and more widely distributed than the great plagues of former times.* The diseases of to-day destroy more animals, but the victims are scattered. Instead of destroying half of the cattle within a

limited area, they may destroy 5 per cent. of the cattle in a district a hundred times as great, or, the victims may be gravely injured and rendered unprofitable but not killed. *Animal plagues in these days are not so explosive as they are erosive.* Tuberculosis, abortion, and calf cholera were never before so prevalent as they are to-day. On account of their insidious nature they do not cause the alarm, but they do cause as much loss as some of the more spectacular and rapidly spreading maladies. Besides these, there are the various infectious diseases of horses: glanders, infectious pneumonia, influenza, strangles, tetanus, purpura hæmorrhagica, also various forage poisonings, and osteoporosis. In addition, there are numerous infectious and parasitic diseases of other animals and there are important veterinary problems in connection with breeding and animal production, all of which require elucidation. *The veterinarian is not only a physician for animals—he is an* ANIMAL ENGINEER. Moreover, the work of the veterinarian is of great and increasing importance with relation to the supervision of the production of foods of animal origin.

I have referred only to such veterinary work as is of *immediate public importance*, but surely it is also of importance that owners of valuable animals may be able to obtain the services of skilled men to furnish advice as to the prevention of disease and to treat ailing animals, so that, so far as possible, their sufferings may be relieved and they may be restored to usefulness.

It is necessary only to turn to the experiences of other countries to learn that a large part of our great and continuing losses from animal diseases is avoidable, and is a result of neglect.

The veterinary development of Denmark furnishes a very instructive lesson. Denmark is a small, bleak country, and a generation ago it found itself stripped of its fairest province, impoverished by war and confronted by changed economic conditions that made it impossible for it to continue the kind of husbandry (grain production) that had formerly sustained it. The indom-

itable will and resourcefulness of the people brought about a complete change in the agricultural conditions, under which dairying became the chief industry. This brought into great prominence the importance of animal hygiene. The old veterinary school of Copenhagen, established in 1773, had long before laid the foundation for a substantial veterinary development. Through the influence of the men trained in this school, one infectious disease after another was exterminated or brought under control until, at this time, there is no other country in the world with such a large animal population, in proportion to its area, where the animals are as healthy, as productive and as profitable as in Denmark. The Danish work in the development of the means of control of tuberculosis, abortion, calf cholera and milk fever has brought to the veterinarians of that country world-wide fame. The present prosperity of the people of Denmark is due in a very large degree to the work of the veterinarians. *One discovery by a Danish veterinarian, a cure for milk fever, has already, in the course of five years, been the means of saving to owners of cows throughout the world a sum sufficient to equal all of the money that has been expended on the construction, equipment and maintenance of all the veterinary schools established since the first one, at Lyons, in 1762.*

Belgium is the most thickly populated country in Europe, but, notwithstanding this, it has an extensive and highly developed live-stock industry. In draft horse breeding, Belgium has taken particularly high rank, and the farms yield astonishing quantities of dairy products. This would not be possible if the health of the domestic animals were not carefully and successfully guarded. The quality of the service rendered by the veterinary profession of Belgium and the public appreciation that this work has received are shown by the fact that the veterinary school in Brussels, founded in 1832, is now being re-equipped with a group of nine school, laboratory and hospital buildings, beautifully placed on large, park-like grounds, at a cost of about 6,000,000 francs.

In Germany, there is a veterinary system that has been developing since 1778, when the first German veterinary school was established in Hanover. Other schools have been established until there are now six, all well equipped and adequately supported. The German organization for administering the veterinary laws is interesting because it shows the results of a natural development, in accordance with the needs of the situation; the development being guided by a well-trained profession. The central administration of veterinary laws in Prussia, for example, is in the branch of government presided over by the Minister of Agriculture. The Minister of Agriculture is advised in all technical veterinary subjects by a board of veterinarians. All rules and regulations for the control of diseases of animals and for the guidance of official veterinarians are made by this Board. The Board also subjects to a written, a practical and an oral examination all candidates for appointment to the positions of department or district veterinarian. In each local district there is an official veterinarian known as the *Kreistierarzt*, whose duty it is to exercise local supervision with regard to infectious diseases of animals, to advise and encourage breeders, to supervise horse-shoeing, to enforce quarantine laws, and, in general, to look out for and to improve the health, quality and usefulness of the domestic animals of the district. The Department Veterinarian has somewhat larger jurisdiction; his field includes many local districts. The department and district veterinarians are subject to regulations from the Minister of Agriculture and from the chief executive officers of the departments and districts.

The result of this arrangement has been to bring the whole of Germany under such veterinary supervision as to lead to the great restriction of infectious diseases and greatly to improve the live-stock industry. This benefit to the country is reflected in the adequate generous support of the veterinary schools, for it is clear to every one who has looked into the subject that the real value and the permanence of the system must depend on the schools.

It would not make the case stronger to go on and to pile up example upon example of the public advantages from veterinary work or to show that a country cannot reap these advantages without fostering the development of the veterinary sciences.

Surely, it should be possible for our country to learn this lesson from the experience of other countries. The leading facts are that the losses from preventable diseases of animals are great, and they are avoidable. Why continue to suffer them? Let us profit by the experience of others. Franklin said, "Experience keeps a dear school, but fools will learn in no other, and scarce in that." Let us not be fools. The tide appears to be turning in our favor. Let us take advantage of it, accelerate it and endeavor *by united effort* to hasten the day when the benefits that come from the development and the teaching of the veterinary sciences shall more fully contribute to the happiness and prosperity of our country. This can be done by making clear the necessity and the benefits of veterinary work—and this task rests upon us.

"WHY don't you get an automobile?" "Why, dear sir," was the answer, "I don't need it. I have a dog, three life insurance policies, and a boil. I have trouble enough."—(*Washington Star.*)

HAMBLETONIAN X.—Hambletonian X., the founder of the harness turn horse, served in the stud for twenty-four consecutive years, and out of a total of 1,930 mares received he got 1,333 foals; of these 40 became standard performers (2:30), 150 of his sons produced standard speed, and 118 of his daughters were also producers. The total number of standard performers credited to the old horse and his sons and daughters is 1,879. Beginning at the age of 2 years to do service in the stud, he was limited to four mares; at 4 years the number to be received was unlimited and he served 101 mares. His greatest number in one year was 217, when Hambletonian was 15 years old. This number receded until the horse's 22d year, when he was given a rest, as it was noticed that his powers of production were waning. At 23 he was again put in service, and continued until he was 26 years old. This was in 1875, and though he was mated with 24 mares the result of this mating was but two foals.

REPORT ON SURGERY.

By C. C. Lyford, M. D., D. V. S., Minneapolis, Minn.

Read before the Minnesota State Veterinary Medical Association, July 11, 1906.

Clinical surgery is, in my opinion, the most potent factor in the success of this Association, as well as that of the A.V. M. A.; and as the majority of our members have come to us with a limited experience as surgeons, it has been a source of great pleasure to notice the improvement, both in their willingness and ability to operate; and, that they come from all over the State to take part in these clinics, makes me feel sure that if this Association were asked to vote on what it considered the most *essential* part of our program, and the one that they expect the most practical good from, the majority would be unanimously in favor of *clinical surgery*—the Pennsylvania Association, notwithstanding.

There is a broad field for experimental surgery which needs our especial consideration, as there are many cases of deformity as well as abnormal and defective action which need to be corrected, and which by right should come under the supervision of our "veterinary colleges," more especially the Veterinary Department of our Experimental Stations, which not only have every advantage over private practitioners so far as opportunities are concerned, but also have an abundance of apparatus and help, if needed. So far we have looked in vain for help from these quarters, with the exception of perhaps the Cornell Veterinary Department, which has furnished us some very valuable and interesting articles and operations.

Some of the most useful operations have come to our profession from *non-professional* workers, such as castration of cryptorchids, having been perfected and made both surgical and practical by "Farmer Miles" of Illinois.

I have often been asked if it were advisable to operate on so-called "bog" or "blood spavins." Although favorable results have been obtained by opening them uuder certain conditions, still the danger of complications from lack of antiseptic sur-

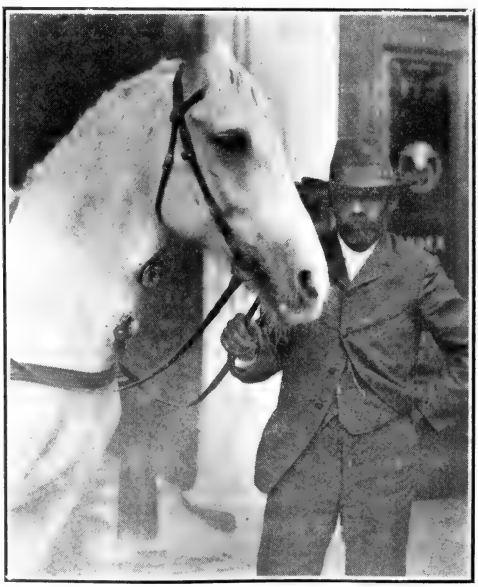
roundings would hardly warrant recommending it for general practice.

There is another and apparently very useful operation that comes with the commendation of Dr. Hughes, of the Chicago Veterinary College, which consists in ligation of vessels and nerve passing down the inner surface of the *hock*. This is not only an apparently very successful method of treating bursal enlargements of the hock, but is sufficiently safe to be recommended to our Eastern brothers, *who claim* to lack that "*rarified atmosphere*" "which *we* possess"—thus allowing more cases to get well, "in spite of *our treatment*" of bursal enlargements.

MISTAKES IN SURGERY.

We all make mistakes in surgery, and by reporting them as we meet them and by showing wherein the mistakes are fatal, should prove a source of benefit to the members of this Association, as well as the profession in general.

The accompanying photo, taken July 2, 1906, is that of a horse which had been operated on for tracheotomy about two



years previous, and, although this operation had proven fairly successful, the owner having used the horse for ordinary farm work during said period, notwithstanding the tube was inserted rather to the left side of the trachea, two or three of the cartilaginous rings having been cut through, and, as a very common sequence of this operation, a bony tumor formed at the right side of this opening, making it difficult to retain tracheotomy tube in original opening and to obviate this difficulty a second operation was performed by the same veterinarian, making the opening into trachea about eight inches below the original one, and at this time it was made a good deal to the right of the median line, opening into trachea being nearly one inch to the right of anterior median line, the cut being made through at least five of the cartilaginous rings, and as a consequence the tracheotomy tube would not stay in position, and as a result, the trachea collapsed at this portion, which almost closed the tube, especially so when the animal's head was kept in an elevated position. Even the act of eating so distressed him that he would often put his nose to the floor, which allowed the collapsed portion of trachea to open sufficiently to relieve his breathing. This was the condition in which I found the subject May 5, 1906, when I was called supposedly to operate on a case of roaring, and as I happened to have with me a piece of ordinary garden hose about 14 inches long, was able to relieve the animal by removing the tumor surrounding the original opening through which I passed the hose until it reached below the collapsed portion of the trachea. This immediately relieved the breathing. The tube was retained in position by fastening a cord to the upper end of the tube, which projected about four inches. The string was kept tied around the neck to prevent the tube from slipping down the trachea. By this means the patient did ordinary farm work for nearly two months, and was driven to my stable, a distance of nearly 30 miles, in four hours, June 30, 1906. The owner wished something done to avoid the necessity of keeping a rubber hose inside of the trachea.

I decided to try a jointed aluminum tube, but the only things I could get of the right size were napkin rings; so I drilled and wired them in three places, leaving a space of half an inch between to allow for motion and pliability. The most perplexing question was how to keep this aluminum tube in position, but decided to fasten it to an ordinary nickel-plated bridle rosette, which I fastened to one of the connecting links between the aluminum rings. I then sewed the opening so as to leave the rosette outside of the opening, until sufficiently healed to hold itself in position. The operation was performed July 1, 1906. A large tracheotomy tube was placed in the upper opening and the horse and owner started for home July 2, immediately after having their pictures taken, and with no signs of distress in either, as can be seen by the photo.

There is one other thing of which I wish to speak. I have met with it quite often in practice, and which seems to me a mistaken idea, and as the results are quite serious in some cases I should like to hear it discussed. This seems a sort of mania that some practitioners have of placing rubber bands on the ends of cows' teats to retain the air after having inflated the udder in cases of parturient apoplexy. Some cases have been months in recovering, and others made troublesome and hard milkers as the result of stricture in the ends of the teats.

(*The sequel to this story will appear in the January* REVIEW.)

VETERINARY DOCTORS all seem to be doing a good business whether located in the country or city. That is, the trained ones, in whom stock owners can place confidence. It is likely that no profession offers better chances for young men of scientific taste than veterinary science.—(*American Cultivator.*)

A CONTROVERSY has been going on in the New York *Herald*, Sunday edition, between local veterinarians as to the prevalence of the practice of giving motor stimulants to show horses to increase their animation and action, as well as depressants to control unruly animals. It is unfortunate that there is such difference of opinion as the controversy seems to indicate, since one veterinarian who claims great experience with show horses doesn't believe that drugs are given for such purposes.

AN OUTBREAK OF RINDERPEST IN THE PHILIPPINE ISLANDS.

By R. H. McMullen, D.V.S., Veterinarian, Bureau of Agriculture, Manila, P. I.

"*Special Orders, No. 53.*—Veterinarian R. H. McMullen will proceed by first available transportation to the province of Batangas, Luzon, to investigate and suppress an outbreak of rinderpest."

The above orders showed too plainly that the tranquility of the rinderpest situation had been rudely disturbed, and as the other members of the Veterinary Division were widely distributed throughout the Archipelago I was the only available one to be sent to the scene, which was about a twelve-hour trip by steamer from Manila.

Cholera being prevalent in Manila, a forty-eight hour quarantine was in effect; consequently, our boat anchored near Corregidor, and the monotony was relieved only by the excitement attending the attack of a member of the crew by that dread scourge of the Far East.

Upon arrival at the capital of the province of Batangas, I reported to the Provincial Governor, who was formerly an "insurrecto," and I quickly realized after a review of conditions that the rinderpest outbreak was general and that hasty action was imperative.

History of the Outbreak.—A shipment of 150 head of cattle from the island of Mindoro was received in the seaport town of Bauan, Batangas, in June. This town is a distributing centre; thus the cattle soon became scattered to various parts of the province, and infection followed in their wake. Towns in the Philippines are called pueblos, and their municipalities include barrios in their jurisdiction; these are similar to our wards. The barrios of one pueblo adjoin those of another, so that there is intermingling of cattle throughout a province, and infection spreads rapidly and completely.

Eleven towns and adjacent territory were reported infected, and they contained about 20,000 cattle and carabao. The seaport town had lost 2,000 animals, and the mortality in that

place was 90 per cent. of those attacked. The natives had resorted to tying palms and wire around the sick animals' necks; also bled from the ears and tail; placed salt in the mouth, and drenched with vinegar. These means failing, they threw up their hands, and called on the provincial authorities for aid. The reluctance of the natives to report the disease at the outset was in part due to the failure of the bile method of inoculation, which was tried by the military people several years previously. These adverse conditions confronted me, and it was also a hard task to overcome the natural prejudice and antagonism. Luckily I obtained the consent of a Filipino official to inoculate his herd, which was infected, and the results were gratifying. This news spread quickly, and in a short time a cry for our services came from all quarters.

Method of Combatting the Disease.—I wired to Manila for reinforcements, then organized inoculating parties, and systematized their work by concentrating the animals of the infected towns in districts convenient for inoculation. All animals were treated as exposed and were inoculated with 50 c.c. of serum, excepting those which showed marked clinical symptoms, and these received 100 c.c. to 150 c.c., according to their condition. Our success was instantaneous, and at the time of the writer's return to Manila to resume his duties there, five inoculating parties, under the supervision of a veterinarian, were in the field, and more to come. No further reports of disease were received from any district once visited by the inoculators. A vigorous quarantine was established.

Symptoms.—There is no necessity to dwell on the symptoms of rinderpest, as the readers of the REVIEW are familiar with them. A notable feature of this outbreak, however, was the appearance of the pustular form of the disease; about 5 per cent. of the animals presented for inoculation showing pustules in various stages. These animals, of course, were considered as immunes.

The investigation called for considerable "hiking," and the floor of a native shack served as a bed on several occasions. Some of my meals consisted of rice and dried fish.

MODERN VETERINARY METHODS.

By Walter J. Taylor, D. V. M., Ithaca, N. Y.

Note by the Editors of the Review.—Under the above heading there will appear in consecutive numbers of the Review a series of short articles on "Diagnosis," "Differential Diagnosis," "Immunity," "Protective Inoculations," etc. These are not intended to include any original matter, but simply a brief statement of important facts already determined. The advance in the science of veterinary medicine, especially in reference to methods of diagnosis, has been so rapid that unless one has access to the periodical literature of many tongues, it is difficult for the busy veterinarian to adequately appreciate the demands imposed upon him by the newer and more accurate methods which have been placed at his disposal by the ever advancing science of veterinary medicine. Therefore, it is the hope of the author and the editors that this department may prove of real service to those who wish to keep step with the leaders.

* * *

DIAGNOSIS.

The objects of veterinary medicine looked upon from a practical point of view are manyfold, but all resolve themselves into the single idea: that of restoring the impaired health of our domesticated animals and preventing the spread of disease among them. For this purpose, a knowledge of the normal structure and functions of the various organs is indispensable. This knowledge is the principal basis upon which a rational treatment and accurate prognosis are based.

Disease may be defined as a deviation from the normal. Diagnosis, then, consists in the ability to exercise our judgment and training in such a way as to be able to determine the seat and nature of that disease and in distinguishing it from other morbid processes. Surely, its importance to the practitioner cannot be overestimated, as it occupies a pivotal position between causes, nature, morbid phenomena and symptoms on the one hand, and prognosis, prevention and treatment on the other.

It has been said that "there is only one medical science and that is the veterinary medical science." From one view point,

this is true, as the veterinarian is absolutely unable to determine the subjective symptoms of his patient from the patient himself. On the other hand, this is compensated for to a large degree by the fact that we are able in all cases to make a complete objective examination. In this we have the advantage over the human physician, who is frequently denied this privilege, as well as being liable to be misled by the imagination, whim, shame or vanity of the patient.

SYMPTOMS.—A symptom is an appreciable evidence of disease. A symptom, however, may indicate illness without affording the means of diagnosis. Symptoms may, for general considerations, be divided under the following heads:

Constitutional Symptoms.—These are those which affect the whole animal system, such as a rise of body temperature.

Local Symptoms.—These are confined to a definite area and are manifested by swelling, tenderness, etc.

Objective Symptoms.—These are manifestations of disease recognized by the observer.

Subjective Symptoms.—These are abnormal conditions which are recognized only by the patient himself. To the veterinarian, as a rule, these become objective symptoms, inasmuch as a good diagnostician readily observes by the action of his patient what his feelings are. Thus one is led to infer pain from the fact that the patient winces on pressure, and dizziness may give rise to unsteady gait. Some speak of direct and indirect symptoms, but these are generally included under objective symptoms.

Thus far we have dealt with the general appearance and condition of the patient as we find him when called upon to attend to his sufferings. Naturally the next thing that presents itself is the anamnesis. In other words, what is the history of the case in question? Many times a veterinarian is misled in his diagnosis by his ignorance of preëxisting conditions or upon deliberate untruthfulness on the part of the attendant. It is perfectly right that we should acquaint ourselves with some things concerning the patient prior to the time the illness occurred. We may inquire into the nature of the food, sanitary surroundings, etc. Often, however, too much weight is placed upon the history of the case, resulting in a faulty diagnosis.

Comparative medicine has risen above the plane of theorization and has become a science. The recent developments along pathological and bacteriological lines must of necessity make the successful practitioner keep abreast of advanced methods. To-day we know the specific cause of many of our animal

diseases. We should, therefore, also know the means by which their presence can be detected and the diagnosis made as we know the histological structure of tumors and are thereby enabled to differentiate between them.

The veterinarian who makes a diagnosis of glanders or tuberculosis without applying the specific tests for their detection, simply because the animal has been exposed, is not living up to the standard of professional knowledge. It is just as wrong to say a horse is not suffering from glanders, without the application of mallein or the agglutination tests, as it is to say it has glanders and forthwith have the animal innocently destroyed.

If an animal be presented with a slight lameness and an examination be made of the affected limb, it is not always justifiable to pronounce ringbone from the fact that there is a slight bony prominence on the coronet bone. It may be the natural conformation of the bone in question. In what respect and to what degree does it differ from the other three similar bones of the other limbs? If it be a rear limb a careful examination of hock and stifle should be made; if a front limb, knee and shoulder should receive equally as careful attention.

When called upon to treat a case of apparently severe colic, it is well to defer a colic diagnosis. Might it not be impaction or volvulus? Truly, the symptoms are nearly identical, but the loss of a case of colic is not gratifying, while the loss of an animal from impaction or volvulus is not altogether unlikely.

Almost too much confidence is placed by some veterinarians in their ability to diagnose the nature of tumors. We say it is a sarcoma, carcinoma, epithelioma, etc., when as a matter of fact it is very hard to tell without a microscopical examination just what the nature of the growth may be.

The same way, in all cases where a shadow of a doubt may be entertained it is perfectly proper to withhold the diagnosis until a thorough examination has been made. A diagnosis deliberately made and the disease properly treated is infinitely more gratifying than a hasty diagnosis and improper treatment of the affection. We should guard against error, as a mistake in diagnosis often leads to the loss of a valued client.

Often a proper diagnosis is very simple. In a great many cases, on the other hand, it is very difficult. A great many of the animal diseases are similar in their manifestations. When these cases are encountered, with the specific tests now available, we always have the alternative of resorting to a differential diagnosis. This subject will be treated in a subsequent article.

PRACTICAL APPLICATION OF BOVOVACCINE.

In a report to the Grand Ducal State Administration, Neustrelitz, dated at Nuebrandenburg, Sept. 5, 1906, the Council of the Agricultural Main Society of the Grand Duchy Mecklenburg Strelitz (Count Schwerin-Goehreu, Chairman), the following statements are made with reference to Behring's Bovovaccine:

The Agricultural Main Society feels impelled to submit the report requested Aug. 1, 1906, of experiences made here, in practice, without discussing scientific controversies.

In practice, three points are of importance in the preventive vaccination of cattle:

(1) The harmlessness of the vaccine for the vaccinated animal.

(2) The curative and preventive effect of the vaccination.

(3) The dangerousness of the vaccine for man in the slaughtering of vaccinated animals.

Note 1.—In the course of three years, about 3,000 inoculations with Bovovaccine have been performed here under the control of the Agricultural Main Society. Diseases of the animals, in consequence of their inoculation with Bovovaccine, have never occurred.

Note 2.—The animals inoculated with Bovovaccine have proven to be immune against infection by tubercular stock. The animals, which, when calves, were inoculated with Bovovaccine twice, according to directions, were inoculated in the third year in many cases with the largest permissible dose of tuberculin, and have not shown any fever reaction. On basis of our experiences, we therefore consider it proven, that the immunity from bovovaccination lasts at least three years, and other experiences warrant us in the belief, that it will last still longer. A discontinuance of the immunity conferred by the vaccination has to our knowledge never been proven. The vaccination therefore seems to confer an unlimited immunity.

A curative effect of the bovovaccination could be proven in

many slaughtered animals, in which encapsulated tubercles were found. These animals had evidently been infected already before bovovaccination.

In a very few cases there were found in animals coming from highly tubercular herds no encapsulated tubercles. Evidently, these animals had been infected to a high degree before vaccination, since they reacted strongly to the bovovaccination, while calves coming from healthy herds never showed febrile reaction after bovovaccination.

In consequence it is our endeavor to vaccinate the calves at as early an age as possible, to prevent a possible infection by vaccination.

This endeavor is therefore contrary to the recommendations of the Government, and we ask to disregard the advice of the medical council, "to vaccinate animals not younger than three months." The council's advice to vaccinate the calves only at such an age is apparently based upon the experiences made with Tauruman*, to which we will refer in the course of this report.

Note 3.—Now, as regards the dangerousness of the vaccine itself, Bovovaccine contains only mitigated human tubercle bacilli, while Tauruman * contains such in their unmitigated state. Prof. von Behring has stated repeatedly, that he has in no manner and at no time succeeded in proving the tuberculosis virus to be alive, and causing disease of the organism of the bovovaccinated cattle. District Veterinarian Ebeling can confirm this opinion of the statement, that on the occasion of a bovovaccination he accidentally injected some Bovovaccine into his hand, and that this accident has had no deleterious consequences. On the other hand, according to Mr. Ebeling, a veterinarian who had a similar mishap with Tauruman became very sick.

On the basis of the experiences made in Marburg, it must

* Tauruman is a vaccine containing unmitigated tubercle bacilli, with which experiments have been made by the Government, the results of which, however, have not proved satisfactory.

be assumed that the slaughtering of bovovaccinated animals is not connected with danger of infection at any time. The Imperial Board of Health will institute further tests in this direction. Should the results of these tests, contrary to the expectations, cause a certain quarantine to be introduced for slaughtered bovovaccinated calves, it would, according to our opinion, be advisable to issue an order to the effect, that the owners of bovovaccinated cattle shall not be permitted to sell them before this time has elapsed.

If it is further ordered that calves receive numbered ear-marks when bovovaccination is performed, as they do in this locality, wherever vaccinations are made by the Agricultural Main Society, then the date of vaccination of each bovovaccinated calf to be slaughtered could easily be ascertained from the vaccination records of the owner.

To state the day of vaccination on the ear-mark itself, would decrease rapidity in marking. It should be avoided as much as possible, to complicate vaccination, since bovovaccination is the means by which our tuberculous herds can be healthy.

DR. W. B. MACK, N. Y. S. V. C., '04, has been appointed pathologist and bacteriologist to the University of Nevada. The many friends of Dr. Mack will rejoice to learn that he has so far recovered from his recent illness as to be able to accept this position. President Stubbs is to be congratulated on obtaining a man of Dr. Mack's calibre. This appointment makes the fifth from the alumni of the N. Y. S. V. C. to receive appointments in Western institutions.

PROF. LEONARD PEARSON, State Veterinarian of Pennsylvania, and Dean of the Veterinary Department of the University of Pennsylvania, has in press, to be published by the house of J. B. Lippincott Company, Philadelphia, a translation of the work by Prof. Jensen, of the Copenhagen Veterinary College, on "Milk Hygiene," including milk and dairy inspection. From the commanding prominence and importance of the subject, and the part which veterinarians should be prepared to take in the movement to improve the milk supply of cities all over the country, this work should be eagerly sought for as soon as available.

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."

CHONDROMA OF MEDIAN SEPTUM.*

By J. W. HAXBY, V. S., Villiscia, Iowa.

These cases were caused by injuries, two of them by halter pulling, one of them by a blow on the nose with a stick of wood, and the cause of the others not known. The symptoms are snoring while standing, and some exhibit the sound while walking, but when trotted usually no noise is heard from breathing.

This case, a fine Percheron gelding, the owner said was wind broken. Upon making inquiry found he had been a halter-puller. Examination revealed a small cartilage tumor in the septum nasi, about six inches up from the nostrils, nearly two and a half inches wide and protruding on either side of the septum one-half inch. This particular case did not yield to any treatment, so I decided to operate by removing the tumor. I first inserted a tracheotomy tube, then placed the horse on the table, forced the knife through the skin, and, by slipping the false nostril back of the blade, did no injury to it. Then by inserting the finger up the nostril the tumor could be outlined and knife guided so as not to remove more or leave any of the tumor intact. Then forced cotton or gauze back of the seat of the operation to fill the nasal cavities tightly, that no blood might escape into the larynx and gravitate down the trachea. I then packed the false nostril tightly to the nostrils and took a stitch in them to keep the packing in place. The animal was placed in a position where he could not rub his nose and dislodge the packing. This was removed at the end of twenty-four hours, for fear that death of the mucous membrane from pressure might result. The tracheotomy tube was removed in three days. Treatment consisted in washing the seat of operation with a zinc sulphate solution, two drams to the pint of warm water twice daily. The animal made a good recovery in about three weeks.

Another way I have operated gave equally good results, but is a little more difficult, and consists in removing the false nostril. The opening through the skin should be made somewhat higher up, as it is more difficult to excise that part where the

* Read before the Iowa Veterinary Association.

nasal peak and premaxilla join. This simply increases the nasal cavity around the tumor. This must be done without leaving any ragged edges or you will have to operate a second time. The nasal openings must be packed the same as in removing the tumor, only much farther back, to get behind the incisions. I would advise anyone who has not operated in this way to have their packing close by, as there will be blood, and plenty of it.

AZOTURIA (?) WITH A PECULIAR HISTORY.

By GEORGE W. STANBRIDGE, D. V. S., Winchendon, Mass.

I was called on the telephone Nov. 2d, at 3.30 in the morning, to the stables of Streator & Baily, to see a horse that was sick. I found a small brown horse down on the floor, where he had been drawn from his stall, he having been found cast. Animal 18 years or more of age. Pulse, very weak and uncountable, temperature, 105° F., breathing fast and short, covered with perspiration. This horse had been at work every day, and had worked all of that day, coming in late that night all right.

He would not try to get up. I gave him a hypodermic of strychnine sulph., one grain, put slings under him, got him on his feet, where he stayed for twenty minutes, when he wanted to lie down. Had a good bed made and let him down. Left a slight stimulant to be given him and went home. Saw him again three hours after. Temperature, 103° F. Looked better, but would not try to get up. Gave a one-half grain hypodermic of strychnine and a little whiskey. Put the slings under him; only helped him slightly, he very nearly getting up alone. Drank most a pail of water and ate a quart of oats; used all four legs while standing, with very little support from the slings. After half an hour he wanted to lie down; had the bed made up and let him down again.

The old harping: "If his water was drawn I know he would be all right." I drew the water, saying that I did not think it would do the horse any good, but that it might satisfy them on that point.

Now comes the surprise (at least to me): Black urine, so thick that it would hardly run, and dried quickly and like varnish on the hand.

Azoturia in a horse working every day and coming in from a day's work all right, with a high temperature, is something new to me.

The age of the animal and the fact that he had been cast some three hours, are my reasons for giving stimulants with a temperature so high. I thought that I had a case of exhaustion, caused from his efforts to release himself.

GOOD RESULTS FROM PASSIFLORA INCARNATA IN THE TREATMENT OF TETANUS.

By MARTIN R. STEFFEN, M.D.C., El Paso, Texas.

Our experience with this drug is limited to four cases, but from the good results achieved in each instance it is safe to assume that further trial will not be disappointing.

In the four cases spoken of above passiflora constituted the entire treatment from beginning to recovery (excepting, of course, the local application of antiseptics and the provision for drainage in those cases where the seat of infection could be located, and the usual precautions in regard to the elimination of exciting noises and excessive light, etc.) Two drams of the fluid extract are given every four hours until the abatement of prominent symptoms, after which it is to be given three times a day in the same doses. Recovery usually follows in from three to five weeks.

A very pleasant feature of this treatment is the fact that the terrible spasmodic contractions seem to be controlled from the start and do not occur during the entire attack.

We would be pleased to have other veterinarians report their results with this drug in the treatment of tetanus.

N. B.—Since writing the above I am informed on good authority that the fluid extract is not stable and that even better results may be expected from the use of the mother tincture of passiflora.

TWO CANINE CASES: PARALYSIS FROM CONSTIPATION—INTESTINAL OBSTRUCTION FROM A BALL OF HAIR.

By A. E. MERRY, D.V.M. (Assistant to DR. H. D. GILL), New York City.

Case No. I.—A water spaniel bitch was brought in, Saturday, September 22, unable to stand, being completely paralyzed in the hind parts. I examined her thoroughly and made the diagnosis of paralysis due to constipation. I began treating her with a physic, and applied electricity and astringent liniments to the parts. She made rapid improvement and is now able to stand, run around and is apparently well.

Case No. II.—An aged Newfoundland dog was brought into hospital Saturday night, September 29. He had no appetite,

vomited and had no passage of the bowels for several days. After an examination I diagnosed the case as complete stoppage of the bowels.

I began treating him by giving a physic. The next morning I found him dead, and held an autopsy, which revealed a large hair ball 1½ by 2½ inches, weighing six ounces, lodged in the intestine unable to pass the rectum. The stomach contained a very small quantity of mucus and hair and the intestines were greatly distended with gas.

ANOTHER BOVINE MONSTROSITY.

Wm. K. Breckenridge, D. V. M., Basil, Ohio, sends the accompanying photo showing front and side views of a monster calf head, which he recently met with in practice. In a letter he says: "I will not attempt to classify this freak, but would say that it falls under the *partial* clefts of the head. The tongue protrudes upwards more than it should, since the head was hardened in a position which caused the tongue to extend;

otherwise the head is about the same as when it was taken from the cow. The owner of the cow, Mr. Charles Giesy, said that the cow had a cough and was frequently bloated. When called I found both fore limbs presented with the head of the fœtus turned backwards. The fore limbs were both removed before the head could be brought into position for extraction. Even then I found extraction quite difficult, since the entire fœtus was very large. A 'Suplicator' was used by Mr. C. C. Lithaker in taking the photograph."

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

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

Aneurism of the Posterior Aorta with Thrombosis of the External Iliac Artery [*E. W. Hoare, F. R. C. V. S.*].—This is the interesting case of a 19-year-old mare which presented lameness of one hind leg, appearing on work after a few days of rest with inability to stand on that leg, slight hardening of the gluteal muscles . . . in fact, the symptoms of azoturia, except the condition of the urine, which did not show any of the characteristics of that disease. The examination of the leg showed that it was deathly cold from the hock to the foot. Rectal examination revealed at the termination of the posterior aorta an enlargement, rather hard to the touch, and through each pulsation gave a peculiar thrill to the fingers. Pulsations of the off external iliac were very feeble; those of the near artery were normal. A diagnosis of thrombosis of the iliac artery was made and destruction was advised. But the owner did not consent to it for several days. The mare was finally chloroformed with 1 lb. 9 ozs. of fluid. At the post-mortem, "on removing the abdominal organs, a very large dark colored tumor was apparent on the right side of the posterior aorta, a short distance above its division. It was an enormous aneurism, with walls so thin that it was surprising how rupture did not occur during the casting and struggling of the animal. It contained a large amount of blood clot in various stages of organization, some portions being of quite recent origin. The right external iliac artery was completely plugged with a firm thrombus of a pale yellow color and the vessel was much smaller than normal and felt like a firm cord. The muscles of the off quarter were wasted and very pale."—*(Veterinary Record.)*

Multiple Adenocarcinoma in a Bull Dog [*Guy Sutton, M. R. C. V. S.*].—Well-bred bull bitch, fat, weighing 60 pounds, seven years old. She has had several attacks of lameness of the left hind leg and manifested pain on rotation of the stifle joint and also on manipulations of the skin over the course of the sciatic nerve. Treated for rheumatism, she recovered under appropriate treatment. Later she had vomiting and then

diarrhœa; her lameness returned and was more acute; her appetite was irregular; she lost flesh; temperature, 101°; pulse without its normal intermittency has a marked dicrotic thrill to the finger applied on the femoral artery. Dysentery set in; she became very thin and weak, and finally was put out of the way painlessly. At the post-mortem a very large tumor was found in the substance of the liver, accompanied with quite a number of smaller ones. These tumors were of a dirty white color, and when examined under the microscope proved to be adenocarcinomatous in nature.—(*Veterinary Journal.*)

RUPTURE OF THE SPLEEN CAUSED BY A KICK [*Capt. R. C. Cochrane, A. V. D.*].—Two horses disagreeing had to be separated, but not until they had kicked each other. One that had been quite injured was put in a box by itself, where he laid down and refused to get up or even to attempt to do so. Externally he showed a severe contused wound on the inside of the off tibia, with marks of kicks on the flank and near side of the abdomen. There was no indication of fracture. The temperature and respiration were normal. Later in the afternoon the pulse was weaker and the mucous membranes very pale. He got up, but soon laid down again. When up, whenever he moved, he seemed giddy and not to be fully conscious of what was going on around him. The next morning he was in about the same condition and died. He ate nothing all the time he was ailing. At the post-mortem the abdominal cavity was found full of blood, the mesentery was discolored around the mesenteric vessels, and the spleen, weighing 8 pounds and 8 ounces, was ruptured on its internal face, there being two distinct rents, one smaller (four inches in length), and the other larger, which was V shaped and measured ten inches. The stomach was full of food and larger than normal.—(*Veterinary Journal.*)

RUPTURE OF THE AXILLARY VEIN [*V. S.*].—A gray mare, aged 12 years, has been bought recently. She is a little nervous and at times unwilling to work. One day, while in double harness, she travels seven or eight miles, at a steady trot, when suddenly she lags in her work, tries to rest on the pole or against her mate. The near fore leg has a diffuse swelling in front of the muscles of the arm. The leg is trembling and the animal cannot rest on it. Taken out of harness, she lays down after a few minutes, and twenty minutes after she dies. At the post-mortem, an enormous mass of clotted blood is found in the axillary space, between the internal face of the shoulder and

the external face of the lateral thoracic wall. The surrounding muscles, the subcutaneous cellular tissue of the anterior face and of the external side of the arm also contain extravasated blood. The dissection of the large bloodvessels, made to find the cause of this fatal hæmorrhage, revealed a rupture of the axillary vein, whose walls appear to be thinner than normal.—*(Veterinary Record.)*

EXCISION OF THE EYE-BALL AND SUBSTITUTION OF A GLASS EYE IN A DOG [*Ernest Child, M. R. C. V. S.*].—The subject was a fox terrier, seven years old, which received a very severe scratch on the right eye and for which no professional care had been demanded. The eye had assumed a very ugly appearance. It was swollen, protruding and abundant discharge ran over the cheek. The cornea was torn; it had lost its transparency and of course sight was gone. The owner desired to have the eye removed. The animal was chloroformed and the eye removed by careful dissection without much hæmorrhage. The orbital gland and the membrana nictitans were left intact. No special care was required, except cleanliness and antiseptic washing. There wasmuch soreness for a few days after the operation, but as soon as that had subsided a human artificial eye was put in place. The dog objected to it and rubbed it out as if it hurt him. This was done for several days and finally a solid artificial eye was resorted to. This proved a perfect success. The dog got used to wearing it at once and now it looks quite natural and no doubt the animal is much improved in appearance. Such a result is an inducement for others in similar cases.—*(Veterinary Journal.)*

AN OVERSIGHT IN DIAGNOSIS [*Young Practitioner*].—Bought recently at auction, a pony mare was taken home and put to work. She ate and worked well. After two days she was taken with colic, refused her food and the author was called to see her, as the warranty was to expire. The temperature was elevated 103°, but no satisfactory diagnosis made. Only one important symptom was recorded, but overlooked, namely: the animal had passed but little manure since she had been bought. She was returned after a laxative had been prescribed. The owner, however, liked her so much that he decided to keep her. She went on doing well, feeding and working to his satisfaction for a while. Then she was again taken ill with constipation. The temperature raised again, but there were only very slight colics. Oil, laxatives and stimulants were prescribed, but after an illness of four days she died. The

post-mortem revealed a large abscess in the abdomen, in the muscular tissue of the small colon, about one foot from the rectum. The walls were thick, fibrous and contained thick pus. It was as big as an orange, closing the lumen of the intestine. The author acknowledges his oversight in not making rectal examination, which, no doubt, would have permitted the discovery of the tumor.—*(Veterinary Record.)*

THORACIC WOUND—RECOVERY [*A. Maynard, M. R. C. V. S.*].—Twenty months old, a heifer, four months in calf, got hurt in rushing out through a gateway, and an iron bolt pierced her chest half way in the middle. The wound was a perpendicular one, measuring five inches in length, running into the chest. Small pieces of bone have been taken off, as there are fractures of the 9th and 10th ribs. The treatment consisted in enlarging the wound so as to remove about all the pieces of broken ribs. The lungs being uninjured, the visceral pleura was washed with antiseptic solution, with the hand and arm introduced into the cavity; tincture of iodine was injected into the thorax, the external parts were disinfected, the wound stitched, and hot bran and vinegar poultice, in clean linen bags, applied over the chest. Laxatives were administered and astringent lotions applied during the treatment. The animal was seen several times during her illness. She did well; her temperature never went above 100.75°, the appetite remaining good all the time. The stitches were removed after a week and simple dressing applied as there was but little suppuration, and this subsided shortly after. In due time the cow delivered of a sound and healthy calf.—*(Veterinary Journal.)*

A CANINE CASE [*V. S.*].—The subject of this case is a fox terrier, which, chasing a cat, fell into a narrow area, six or seven feet deep and was picked up unconscious. The pulse was good, there was no fracture; the dog was as if coming out of a chloroformization. He was left alone to allow him to recover, which he did after three hours. At that time he was perfectly conscious, attempting to walk, but unable to do so. The neck was turned slightly towards the left side, and the left fore and hind limbs, though not completely paralyzed, showed considerable loss of power and coördination. When placed on his feet the animal would either stand rather tremulously for a few seconds and then fall to the left, or, more frequently, would attempt to walk and after one or two blundering steps to the left, fall on that side. The muscles of the head and of the face were unaffected. The dog ate and drank with ease when lying

down. The prognosis was rather unfavorable. The treatment consisted in small doses of purgatives, as the dog was subject to constipation. Very little change was observed the two first days. But on the third day, there was a marked improvement. On the fourth, the purgative was stopped and alteratives in the shape of iodide of potash was given. The dog could then show less tendency to go to the left, he could cross the room without falling. At the end of the twelfth day he could walk comparatively well. A tonic of quinine completed the treatment, the recovery being perfect a week after.—*(Veterinary Journal.)*

GERMAN REVIEW.

By J. P. O'Leary, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

Reports from the 8th International Veterinary Congress:—Protozoa as the Cause of Disease in Animals [*Laveran and Vallée*].—The pathogenic protozoa affecting animals can be divided into three groups: Sporozoa, piroplasma and trypanosoma. The rôle of the sporozoa in veterinary pathology has hitherto been limited (coccidosis of rabbits, young cattle and birds, sarcosporidosis of sheep, cattle and swine). On the other hand, the piroplasma and trypanosoma cause epidemics among the domesticated animals and which on account of frequent and fatal results, deserve special attention. (1) Piroplasmosis:—Under this name we refer to a whole series of infections, observed in the large domesticated animals and which are caused by the parasites vegetating in the blood corpuscles; they belong to the group of the piroplasma. Piroplasmosis occur in sheep, horses and dogs. The writer gives accurate data concerning the geographical distribution of the contagion, the symptoms, the anatomical findings, the therapy and prophylaxis. (2) Trypanosomiasis:—At present we are able to recognize the following separate forms of trypanosomiasis: Surra, nagana (tsetse disease), trypanosomiasis of the horse, galziekte, mal de caderas, dourine *(beschälseuche)*. Among the pathogenic trypanosomes, from a morphological standpoint, there are individual cases well characterized (galziekte, caderas, trypanosomiasis of the horse in Gambien. As for the others, however, there exists a peculiar similarity, that their identity is very difficult to establish. The intensity

of their pathogenic action for the different species of animals furnish the most important features. With the following process several species of trypanosoma may be differentiated from one another. By investigating, in the case of two closely related trypanosoma diseases, whether such animals which are actively immune against one of these diseases, show themselves susceptible or resistant to another. Cattle affected with trypanosomiasis are not always emaciated. With horses the symptoms in general are characteristic; beside fever, emaciation, anæmia, there are also remarked œdematous swellings, exanthema, visual disturbance and paraplegia; the latter symptoms are present, however, only at the final stage of the disease. Apart from dourine, which is easily diagnosed (etiological conditions, local exanthema of the genital organs, finally paraplegia), the symptoms in the remaining cases of trypanosomiasis rarely permit the presence of this disease. For the establishment of an accurate diagnosis, the presence of the trypanosoma is essential. It is also very important that the veterinarian should be an expert in the search of this parasite. The discovery of the trypanosoma is not difficult, if present in the blood in large numbers; on the contrary, it is difficult when they are few. This is generally the case with cattle affected with trypanosomiasis and horses affected with dourine. In the latter, the trypanosoma are present in greater numbers in the œdematous lesions than in the blood. It is often necessary to use an experimental animal to prove the presence of the trypanosoma. The spread of the nagana disease, is brought about by means of the tsetse fly, chiefly, however, by the *Glossina morsitans;* the surra disease is distributed by means of the different species of stomoxys; the galziekte, through the medium of the hippobosci. The stinging fly also plays a great rôle in the spread of the disease (trypanosomiasis). The tsetse fly infects, when it sucks the blood of the wild animals (buffalo, antelope), which is affected with the latent form of the nagana. The manner of the dissemination of mal de caderas is not yet sufficiently well known. Dourine is distributed by means of coition. Dogs infect themselves with nagana, surra and caderas, by eating infected cadavers while still warm; the infection, however, only takes place through wounds or erosions of the nasal or oral mucous membranes. The combined treatment with arsenious acid and trypan red proved effective in many cases of trypanosomiasis; still this treatment is impracticable with horses, and is inapplicable in the case of animals for slaughter. It is

remarkable that if any one animal is cured of the disease by this method of treatment, the animal does not possess immunity for the same disease. All immunizing experiments which were hitherto conducted, proved negative. The dangerousness of trypanosomiasis and the unsuccessful therapeutic treatment of the same, make the prophylactic measures so much the more stringent as this can prevent epidemics of the disease. The prophylactic regulations adapt themselves necessarily according to the manner of the dissemination of the disease and also whether in an infected country or a healthy neighborhood.

THE SIGNIFICANCE OF THE PROTOZOA IN THE DISEASES OF ANIMALS [*Motas, Bucharest*].—The diseases caused by the amœba (amœbiasis) are yet very little studied. From our standpoint they are of no special significance. However, the relation of these parasites to those diseases in which they occur are still unknown. The trypanosoma are flagellate animals. Their pathological importance is far greater than that of the amœba. The author describes the trypanosoma of surra and nagana, and portrays those African diseases. R. Koch, Ziemann and Schilling (mal de Toga), Cazalbou (ubori), Chamrat, Rennes and Szewzyck, Ed. and Et. Sergent (El Debab), Dutton and Tood have described similar African diseases, as also that of congenital paralysis and those well known diseases named mal de caderas, mal de somedang and galziekte (*Trypanosoma Theileri*). The above-mentioned authors have transmitted the parasites, partly through virulent blood injected into healthy animals, and in part through the virus by means of the insects which are the natural disseminators of the disease and verified their experiments. The coccidia cause the well-known disease, which is known as coccidiosis. The rôle which many of the latter parasites play incidentally in the causation of those diseases in which they are found has not yet been experimentally proven. Their constant presence in the affected animals is a proof, however, that between their occurrence in the animal economy and the disease, a certain connection must be present. Under the designation piroplasma, these well-known protozoa are the cause of piroplasmosis. Their significance has been completely established by more recent investigations. The disease caused by these parasites has been experimentally brought to light through inoculations made with the virulent blood or through the ticks which are the means of natural infection, the distributors of these blood parasites. The author mentions in this connection the piroplasmosis of cattle, sheep,

dogs, horses, asses. Nosema Bombycis, it is remarkable, in so far as it possesses a great national economic value. The sarcospirodia are not yet sufficiently studied. The pathological lesions lead to the designation of psorospermiosis. Very often those parasites are found in healthy cattle. The manner of their dissemination is yet unknown. In conclusion, the writer mentions the well-known species under the name of Sarcocystis Mescheriana, Bertrami, Tenella, and Blanchardi.

TROPICAL DISEASES OF THE DOMESTICATED ANIMALS [*Theiler, Pretoria*].—T. reports the diseases among the domesticated animals in the exotic warm regions, which he divides into three groups: (1) Diseases caused by vegetable organisms; (2) diseases caused by ultra visible organisms; (3) diseases caused by animal parasites. Infectious pneumonia of the goat belongs to the first group; this disease was brought into Cape Colony by imported Angora goats and is designated under the name pasteurellosis (hæmorrhagic septicæmia) of cattle, also anthrax, malignant œdema, bursattee, epizoötic lymphangitis, farcin de boeuf. From the group of the ultra visible organisms, we might mention foot-and-mouth disease and rabies, rinderpest and contagious pleuro-pneumonia, horse sickness and catarrhal fever of the sheep, finally the heartwater (*herzwasser*) of cattle, sheep and goats. The two latter diseases were accurately described by Theiler. The third group include the diseases caused by the protozoa, which with few exceptions, the infection can be traced back to the secondary hosts, ticks and insects. To this category also belong the Texas fever or red water, the coast fever, the malaria of the horse and dog. The piroplasma may be divided into two groups, which are sharply defined. One group has for its type the *Piroplasma bigeminum*, the Texas fever of cattle. The other group of the piroplasma is represented by the African coast fever. It is due to a small bacillus-like piroplasm. Further we include among the diseases caused by the protozoa trypanosomiasis, nagana, surra, mal de caderas, the Senegambia horse sickness and the South African cattle disease. Theiler concludes his report with the following sentences: We may establish as a general law, that in consequence of the exploration of tropical countries through the white man, that animal diseases both known and unknown will increase. At present we stand powerless to cope with the innumerable diseases of those climates. It is therefore extremely difficult to establish leading principles, which the sanitary police of the tropical countries could adopt as a line of conduct.

As a consequence, especially in South Africa, the experiences gained appear obligatory, however, for colonizing the leading states, for to promote the study of animal diseases of the native and imported animals; for it is always in the strict sense of the word the farmer who is called upon to open the civilization of a new country. Veterinary science was treated at most only in a step-motherly fashion; yes, even despicably treated. It, however, alone is called upon to open the way upon which successful stock-raising will be possible in the warm climates. The veterinarian with a bacteriological training belongs to the first pioneers in the exploration of new countries, as experience in South Africa has proven that a scientific veterinarian can render valuable service at all times. — (*Deutsche Tierärztliche Wochenschrift.*)

A RUSSIAN PHYSICIAN has discovered that warts can be removed by simply concentrating upon them the rays of the sun with a convex lens.

THE SOBER SECOND THOUGHT ON THE MEAT INDUSTRY.— There have been many indications of late that our English friends are beginning to realize that their horror at the revelations concerning the Chicago meat industry might well be tempered with reflection on their own methods. Sir Frederick Treves is one of those who have given voice to such a feeling, and at the recent opening of the winter session of the Royal Veterinary College Professor H. A. Woodruff delivered an address in which, according to the *British Medical Journal* for October 6, he said: "It was remarkable that the man in the street, who held up his hands in pious horror at Chicago, appeared utterly unconscious that in this country [England], excepting a few enlightened cities and towns, there was no regular system of meat inspection at all." Veterinary surgeons, Professor Woodruff added, knew very well that carcasses of animals affected with tuberculous disease, anthrax, pyæmia, trichinæ, cysticerci, malignant tumors, and febrile deseases, or those of immature or unborn calves or of animals hurriedly killed to prevent their dying of disease, were dressed and exposed for sale with impunity. England of course is not the only country in which such practices go on; it is not to be doubted that they are rife in our own country at least. It is not the great packing houses alone that should be watched; we ought to have efficient inspection everywhere.—*(New York and Philadelphia Medical Journal.)*

ARMY VETERINARY DEPARTMENT.

VIEWS OF A VETERAN ARMY "VET" ON THE ARMY BILL.

FORT D. A. RUSSELL, WYO., Nov. 12, 1906.

Editors American Veterinary Review:

DEAR SIRS:—In answer to Dr. Jewell's letter in last month's REVIEW, I would like to state my views. In regard to the Army Veterinary Bill now pending, Dr. Jewell says that in its present form it will not please all of us. I grant that; it will not. The Doctor is probably not aware that it took pretty nearly twenty years to place the veterinarians of the Army where they are to-day. I am writing from nearly twenty years experience in the Army, and I come pretty near knowing what I am talking about. I have no doubt that one of Dr. Jewell's objections to the bill is that the General Staff has not advocated a commission for the veterinarians, but that will come, Doctor, but it will take a little time. Every little helps, Doctor. We of the old Army (I mean before the Spanish war) worked hard, financially and socially, to better our condition, and, finally, after a good many years of waiting, we were rewarded by getting two grades—one with the pay of a second lieutenant mounted and one with the pay of seventy-five dollars a month with rations and a clothing allowance, which to those holding the junior position was a great thing. Shortly after that our present Secretary of State, then Secretary of War, through his endeavors got us the position with the allowances which we now get.

It took a time, Doctor, but "we got there just the same." So it will be in the future. The War Department will look out for us. Uncle Sam is all right, only give him time. In the old Army things were not so rosy or comfortable as they are to-day. We had no gold medal cots, mattresses and tents in the good old days, no Pullman cars to travel in to an Indian campaign, but "boots and saddles" any time during the night, ten days rations in your saddle pockets. "Now let me see you smile, Doctor"; good times are coming. Of course, it seems an injustice that a portion of us must take an examination, but I think that if the Doctor would think of the hard times the older "vets" in the Army had that he would give us a show. We were stationed on the frontier, away from towns of any kind, with no facilities for brushing up professionally. I think we have earned going in without any effort. We stayed with the

old Army and I can tell you, Doctor, that times were pretty hard at times—a saddle for a pillow and the heavens for a blanket. I agree with the Doctor that it is an injustice that there is no clause for physical disability in the line of duty.

Now, Mr. Editor, I have just given my views, as I think every one of the older men would give them.

Very respectfully, FRED. FOSTER,
Veterinarian Arty. Corps.

* * *

PERSONAL.

WALTER FRASER, veterinarian 13th Cavalry, Fort Meyer, Va., has been ordered by the War Department to the Liverpool (England) University for the purpose of taking the course in tropical diseases of animals. The doctor will remain there during November and December.

DOG AND HORSE MEAT IN GREATER DEMAND IN GERMANY.—*Berlin, Oct. 24.*—The *Statistical Correspondence Magazine*, analyzing the official returns of the Prussian slaughter-houses for 1905, finds the slaughtering of dogs for food increased 33 per cent. over 1904, and that of horses 19 per cent., the total number of dogs eaten in 1905 being 1,568, and horses 81,312.

THE LONDON "VETERINARY JOURNAL" for October contains a frontispiece photo-engraving and a brief biographical sketch of its new American editor, Dr. W. L. Williams, but without a contribution from his pen. The *Journal* has added yet another editor, this time from Ireland, in the person of George Henry Wooldridge, F. R. C. V. S., professor of veterinary medicine in the Royal Veterinary College of Dublin.

SAND IN CÆCUM OF MULE.—Lieut. Burridge, British Army Veterinary Corps, South Africa, reports in the October *Veterinary Journal* the case of an eight-year-old mare mule, which died from the third attack of colic. On opening the abdomen the stomach was found distended to three or four times its normal size from ingested fluid, while the mucosa was quite highly inflamed, as was also that of the small intestines. The cæcum was impacted for nearly its entire length with a mass of sand, weighing 36 pounds. It was black and quite pure, there being no food mixed with it. The mucous lining was inflamed in patches. The animal was manger fed, with constant supply of rock salt. While under treatment no sand was passed with the fæces.

BIBLIOGRAPHY

THE EXAMINATION OF THE URINE OF THE HORSE AND MAN. By Pierre A. Fish, D Sc., D.V. M., Professor of Veterinary Physiology and Pharmacology, New York State Veterinary College, Cornell University. Published by Taylor and Carpenter, Ithaca, N. Y., 1906. Pp. 69. $1.50.

The busy practitioner is always looking about for means to relieve him of the anxiety attendant upon the difficulty of diagnosing obscure diseases in his medical cases. This is the reason for the avidity with which he has seized upon recent knowledge of the Negri bodies for the diagnosis of rabies, and the agglutination method for the diagnosis of glanders. In human medicine urine analysis has long been employed in diagnosis and prognosis of difficult cases, particularly abnormalities of the kidneys and liver, and for discovering the metabolic condition of the body. Dr. Fish, in our profession in America, is a recognized leader in the application of methods of chemical and microscopic analysis to the urine of the domesticated animals. All of us are apt to be puzzle-headed in such maladies as azoturia, where the kidneys are probably the chief seat of disease. Urine analysis solves many puzzles, unravels many skeins in difficult cases; particularly in nephritic and hepatic ailments. There is no reason why, with such a book as this of Dr. Fish's in hand, with a few reagents, and some of the simple paraphernalia of the laboratory, excellent work could not be done in the analysis of urine in private hospitals. Many practitioners could install such a laboratory to their gain.

The author evidently believes in cogency and point, rather than mazes of words, in book-making; so, in his ten short chapters, has included every method which modern practice has proven to be valuable. The work has many illustrations displaying findings under the microscope in pathologic conditions of the urine, accounts of the few instruments necessary, together with standard forms used in the analysis of urine of the horse and man. In addition, we should say the book is bound in white oil-cloth boards, making it serviceable for rough every-day usage. (D. A. H.)

THE article on "The Meat Inspection Movement and After," which Dr. D. Arthur Hughes contributed to the October REVIEW, also appeared in the *New York and Philadelphia Medical Journal* for Oct. 25.

CORRESPONDENCE.

VETERINARY OPERATING TABLES—A REPLY TO SOME POINTS IN DR. WILLIAMS' ARTICLE.

NEW HAVEN, CONN., November 14, 1906.

Editors American Veterinary Review:

DEAR SIRS:—On page 931 of the November REVIEW Dr. Williams says: "It seems to us from observations made that this apparatus known as the revolving stocks possesses this quality [safety of operator] in the least degree of any of the three types mentioned." He states also that in securing the horse in the apparatus the operator seems to be more exposed to kicks, strikes, and treads than applies in any of the other three types of table. He further says: "Once the animal is secured the operator is safe with any type of table, although with the Vinsot apparatus, as shown in Fig. 5, when it is desired to operate on legs or abdomen he must be completely surrounded by the horse and apparatus combined, so that if a foot should become accidentally loose the operator is hemmed in in such a way as to invite serious injury. He must also stoop to pass under the chain and bar in passing to and from the operative position."

We wish to explain this fully so that there will be no misunderstanding in the matter, for the table known as the Humane operating table (which is referred to by Dr. Williams as a modification of the Vinsot table) is supplied with two six-feet auxiliary attachments which are adjustable and removable. When the table is to be used for the shoe-boil operation, hernias of any type, operations on the scrotum, laparotomy, cryptorchid castration, etc., there are two lock pins which can be easily taken out, *completely removing one side of the table.* The patient is then walked up to the table as to the side of any other table, and is secured to each of the two uprights, which have removable padding.

For cryptorchid operation the sling may be placed in the usual manner and the chain which holds the hopples is left loose, hopples being placed on patient before he is taken to the table. The chain can be readily passed through the rings in the hopples and attached to the front end of the table. The sling can be quickly placed on the animal's body and hooked to the raising device. If it be an unbroken and wild animal, the

hood-halter is usually placed on the animal and the halter staff used to guide the horse to the table. If the patient be a wild and ugly unbroken colt, the chains can be loosened to their full extent, which allows the animal to be fastened to the two chains and sling while standing outside of table six or eight feet, one side of the table having been previously removed. This permits two attendants to handle such an animal more readily and more safely with this table than with stationary tables.

After the chain has been placed through the rings in the hopples, the sling having been hooked and locked, the raising device crank may be slightly turned by one assistant. As soon as the animal begins to bound, as is often the case, the raising-crank device can be turned more rapidly, which soon pulls the animal up to the side of the machine and raises him from his feet. The crank which tightens the hopple chain can be rapidly taken in, which tightly secures the feet.

Two slipper-noose ropes attached to each ankle of the horse are then used to quickly lash the fore legs to the front auxiliary attachment, and the same kind of ropes may be used to fasten the hind legs to the back auxiliary attachment. The animal may then be turned to the left or right, as has been previously decided by the operator. The worm-gear is then employed to turn the animal over, and the chain is detached from the hopples; the two pins or the two nuts are removed from the bar in the lower part of machine, which allows the rod to be pulled out. The surgeon is then free to walk up to the body of his patient without being hemmed in by the bar and chain.

A fifth noose-rope is fastened to the upper hind leg of the animal. This can be attached to a ring in the ceiling, or by placing the upper bar in the table without the body-rest, spreading the hind legs of the animal. He then has free access to the selected operative field, permitting him to stand at the back of the patient, or to walk into the space between the front and rear legs, there being no part of the table which in any way interferes with his operation; and with two or three assistants, if required.

After the operation has been performed, the leg is again lashed back to the auxiliary attachment. If chloroform has been administered, the patient may be allowed to lie on the table for fifteen or twenty minutes, or until recovered from the anæsthetic. The worm-gear is then turned, which places the horse into the standing position, and released. Should the animal be slow in recovering from the anæsthetic the sling may

be left so that it will support him until he regains consciousness, when the hopple chain may be unlocked and the chain slipped out of the hopples. The sling is unlocked from the back of the animal and allowed to slip off. The head is unfastened, the padded halter removed, and the horse led to any stall or place designated.

The table may be used in like manner for shoe-boil operations, amputation of the penis, operations on scrotal hernia, scirrhous cords, or any operation about the scrotal region. For umbilical hernia or laparotomy the operator simply passes four loops of strong rope about each quarter of the body, allowing them to come at the top of the hips and withers, where they are tied to the hooks attached to the raising device, the sling not being used in these cases. The feet are made secure by the hopples on the chain, as previously described, and are then attached to the two auxiliary attachments, the chain and rod being again removed, after the animal has been turned over, as already described.

If it be a foot operation, such as resection of the lateral cartilages, the rod is placed directly under the chain and locked. After the horse has been raised and turned partly over in the usual manner, the operator places the cranks used to raise the horse on the raising device, and lowers the patient six inches, which takes about five seconds. He then turns the patient to any desired angle, securing foot to be operated on tightly to the rod and chain with a piece of webbing or rope, lashing the leg above the ankle to the rod and chain. After the elastic ligature has been placed in position the leg is relashed to the chain and rod very firmly with another figure-eight inch webbing, so that it is firm and tight. If properly secured, there is no possible chance for the patient to loosen his foot. The other feet may be pushed along the chain and also tied to the rod and chain, so that there is no possibility for the operator to be struck with them, as the rod, if placed in the centre of the machine, comes between the patient's legs. The foot which is being operated on projects over the rod and chain, which allows the surgeon to stand outside the machine, disinfect and cleanse parts to be operated on, perform the operation, and apply dressings. This is all accomplished while the operator stands outside of the machine.

In poll-evil operation, the two loops which hold the raising device fastened to the top of the table are moved backward two or three feet toward the head of table, and the sling is reversed.

The patient is *backed* into the table instead of being led into it. The head is attached to the upper end of one of the auxiliary attachments, the padded halter being used. The patient is raised off his feet and the hopple chain tightened, as previously described, to the right or left. The surgeon then walks in from back of table, where there is no part to obstruct him. He has free access to the operative field. The rod which holds the body rest, having been specially devised for this purpose, bends at each end, which permits the patient to lie in such a way that there is access to the parts for three to five attendants. Chloroform can be duly administered if desired. By turning the table over six inches from a straight line, the head may be lowered in the position recommended by Professor Williams.

For the roaring operation the patient is backed into the table as described for poll-evil, with the exception of the sling, which is placed over the back of the patient. When the patient is thoroughly under chloroform, by turning the worm-gear device for three seconds the animal is turned completely upside down and the head is loosened and stretched into the desired position. The operator stands completely outside of the machine, with nothing in his way. The head of the patient is tied at a downward angle, and the neck stretched out. After the operation, the horse is turned back again to its side, the head is secured tightly, so that it is at a slight angle, lower than the body, thus preventing any blood from oozing from the wound and running down into the trachea.

For neurectomy the Humane table is better than any described in the article referred to. If a double neurectomy is required, both sides of the table can be used and patient turned to the right or left, the operation being performed on both sides without removing the patient from the table. All veterinarians are familiar with the various neurectomy operations, and it can be readily ascertained by the readers of your valuable paper the easy accessibility the operator would have to all parts of his patient. It is easy for a veterinarian to observe that this table is readily cleansed and made aseptic, as all parts of the machine are removable for this purpose.

The table can be readily used for stocks by removiug both side rests and placing the patient in slings, and raising it off of its feet. This is the position in which the mare is usually placed for spaying.

In making this reply to Dr. Williams' article, we do not wish your readers to think that we do not regard Prof. Williams

as one of the world's experts in his profession, he being a gentleman whom this corporation highly respects; but we feel that Dr. Williams has not been able to make a study of the various operating tables which we are about to manufacture.

We exceedingly regret that we have not a man with his ability on our board of directors, for in placing the various operating tables, which we are preparing to manufacture, on the market, we desire that the professional, rather than the commercial spirit should predominate. We feel that we are making a distinct contribution to science and humanity.

Respectfully,

THE BRADWOOD MANUFACTURING COMPANY (Inc.)
Per H. L. BRADLEY.

EMERSON, NEB., is asking for a graduate practitioner.

"MY wife sent two dollars in answer to an advertisement of a sure method of getting rid of superfluous fat." "And did she get the information she wanted?" "Sure; she got a reply telling her to sell it to the soap man."—*(Mystic, Conn., Times.)*

VETERINARY SCIENCE IN JAPAN.—Before the Restoration the so-called veterinary surgeons were horse and cattle dealers who, besides dealing in these beasts, used to periodically apply needle treatment and other simple methods to the beasts. They were, of course, up to the trick of cheating in transaction of beasts, just as practiced by horse-dealers of other countries. The engagement early in the era of a French military veterinary surgeon by the Army was the first step taken by the Government for the introduction into this country of the science and practices of the Western veterinary surgery. By the subsequent establishment of schools of Agriculture by the Government and also by local offices, this branch of medicine has been reduced to a regular system. Till 1885, there were about 6,000 men who were allowed to practice the art in virtue of their previous experience, but the grant of licenses to men of this class was discontinued in 1890, and from that time onward licenses have been granted only on those who have passed the regular examination or have graduated from the veterinary course at Government or public schools, or at private schools of officially approved standing, either Japanese or foreign. At the end of 1905, 2,545 people had regular licenses, and 1,713 provisional licenses.—(*From "Japan in the Beginning of the 20th Century," Published by Imperial Japanese Commission to the Louisiana Purchase Exposition.*)

SOCIETY MEETINGS.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The meeting was called to order July 11, at 2.20 P. M., by President Price.

After the roll-call, the minutes of the last meeting were read by the Secretary, and approved.

The President then delivered his annual address, as follows:

PRESIDENT PRICE'S ADDRESS.

"It is with pleasurable anticipation that we meet together, in spite of the hot wave that is also present. We all look forward to the laudable increase of our professional knowledge by the interchange of ideas and discussion of experiences, each adding his share to the accumulated knowledge of ages past, and which with each succeeding year enables the discovery of some new disease, or the proper classification of a puzzling malady, placing its control and treatment on a scientific basis. The prevention of many epidemic and contagious diseases is yearly becoming a practical fact. Tuberculosis, animals' greatest foe, is being rendered harmless by immunization of stock through vaccination.

"The empirical administration of drugs which has existed up to the present time, promises to be placed on a scientific basis through the researches of Sajous, of Philadelphia, who has compiled from the writings of such men as Virchow, Brown-Sequard, Osler, Foster, Arnaud, Cybulski, Abelous, Biarnes, and others. The heretofore supposed unimportant ductless glands; the anterior and posterior pituitaries, the thyroids, adrenals, pancreas and spleen, he shows to be, on the contrary, the most important structures in life's processes, they forming an autominous system which regulates the body's functions, the anterior pituitary gland being the general centre, insuring oxygenation of the blood and tissues through the adrenal secretion, the posterior pituitary adjusting and regulating the functional activity of all organs through the nervous system. He further shows that the thyroids sustain the functional efficiency of the anterior pituitary, that excessive secretion by causing over-stimulation of the anterior pituitary body, produces, when prolonged, exophthalmic goitre, and lessened secretion myxœdema. That the pancreas and spleen by the con-

junction of their secretions form trypsin, a powerful proteolytic ferment, which plays a leading part in all immunizing processes, its main function in the blood stream being to destroy toxic albuminoids. These include all the toxins and diastases secreted by bacteria, tissue toxalbumins, vegetable toxalbumins and diastatic ferments. That immunizing means the stimulation of the functional activity of certain of these glands to the extra secretion necessary to overcome the toxins, and the bacterial or other substances producing the poisons. That the necessity of alkaline salts, especially sodium chloride, in the system is dwelt upon, more particularly in acute diseases where they are not replaced through the normal channel, the digestive tract, and shown to be the predominating cause of death. That inherited predisposition to certain diseases is considered due to congenital insufficiency of certain of these ductless glands and a low grade of general nutrition. That the results obtained by certain medication is due to the action on some of these glands, either increasing or diminishing their secretions. Toxins act in the first stage by irritating some of these glands, causing an increased secretion, which, if sufficient, overcomes the toxin and its products. That over-stimulation, however, brings about paralysis or lessened secretion, thus giving the toxin full and undisputed control of the body, resulting in death. As previously mentioned, proper and judicious stimulation produces immunity, but sudden and severe stimulation (as that caused by the rapid invasion of a bacterial toxin) by over-stimulating, results in paralysis of secretion, partial or complete. In this manner the prevention of the development of fatal results from rabies and tetanus is secured. That antitoxins are principally composed of trypsin, the proteolytic ferment from the union of the secretion of the pancreas and spleen. That the adrenal secretion enables the absorption of oxygen in the lungs by the blood, and also the oxidations that take place throughout the entire body, producing nutrition, and also preparing the waste materials for excretion as harmless, non-irritating substances. In the latter case failure to do so, or the only partial oxidation of waste material, results in the production of injurious substances which irritate the excretory channels, causing imperfect excretion and the retention of those foreign substances in the system which produce various phenomena, such as rheumatism, gout, azoturia, etc.

"One thing I must ask you to pay particular attention to, as I have already done in my paper on azoturia, read before this

Association two years ago: it is this, that urea is a perfectly prepared body for excretion, that it is absolutely harmless, non-irritating or poisonous. Its solution can be injected in immense amount into animals without producing the least symptom of any description; in fact, plain water in similar amount will cause evident distress. Uræmia must be renamed; it is an evidence of ignorance. The failure, however, of the perfect formation of urea results, as before stated, in the production of substances only partially oxidized, unsuited for the process of excretion, and injurious to the body.

"Minnesota veterinarians have proved themselves among the most progressive and worthy of confidence. They have aided in the elucidation of the pathology of some diseases that have been a cause of trouble and perplexity. The older members have done their share in spite of obstacles almost unknown to the younger ones: such as unjust criticism and doubt as to the veterinarians' capacity; but let it be said they were always equal to the occasion, and hopefully pass along to the younger members the burden of raising the standard of the veterinary profession to a still higher plane, feeling confident that they are fully equal to the task."

Dr. Price then called for the report on colleges by Dr. Amos.

Dr. Amos: I expected that Dr. Reynolds would be here with that report.

Dr. Price: Dr. Reynolds is busy, but will be here later and we will then call on him. I will call on Dr. Whitcomb for a report on infectious diseases.

INFECTIOUS DISEASES.

Dr. Ward: I am sorry to say that Dr. Whitcomb is at Marshall affected with typhoid fever. He was taken sick about May 21, and has been practically unconscious for the last three or four weeks, but the last letter received from there stated that he was improving. I will therefore offer a report for him in his absence:

"For the six months, ending July, 1906, there have been tested for tuberculosis 7,667 cattle, of which number 748 reacted. There have been inspected for glanders 2,048 horses, of which 317 reacted and were killed.

"You will note that the number of reacting cattle, 748 in six months, is the largest in the history of control work in the state. There has been a vast amount of testing done in the

different parts of the state, and we have tried to enforce the testing of dairy and breeding cattle coming into this state, and as a result there have been a large number of cattle tested, not only at the Minnesota Transfer, but at different points.

"I might say at this time that we have a deficiency of $42,000, as the last legislature made no appropriation for paying claims for horses and cattle.

"So far this year we have had but one or two outbreaks of swine plague, but nothing serious.

"With hæmorrhagic septicæmia we have had a few outbreaks in the late spring months, and one or two recently. Our principal work has been with glanders and tuberculosis."

Pres. Price: We all hear with regret of Dr. Whitcomb's illness, and I am sure we all hope he will make a speedy recovery and be with us soon again. The report submitted by Dr. Ward shows that we have a great deal of tuberculosis in the state, and that the work done in the last six months has been very thorough, and a great many diseased animals gotten rid of.

Dr. Ward: There is one thing I neglected to state to the Association, and that is that the superintendent of Swift & Co., at South St. Paul, made a statement that Swift & Co. lost $50,000 a year by tuberculous hogs which were condemned at South St. Paul. I think during the month of June, the Federal inspectors condemned 350 hogs shipped in from Southern Minnesota. Seventy-five per cent. of a car-load of hogs shipped into South St. Paul have been repeatedly condemned. The disease in hogs seems to be much more general than in cattle. The entire system seems to be affected, especially the glandular system. There is no question but that this disease among swine is increasing rapidly in the dairy sections of the State.

Dr. Lees: Dr. Ward, have you any theories to offer as to why it is on the increase?

Dr. Ward: The only theory is that hogs acquire the disease from the products of the creameries which are not properly sterilized. The law requires that skim milk should be sterilized at a temperature of 180°, and it is questionable if they do that as it requires a great deal of work and the butter makers do not have much time.

Dr. J. W. Gould: I think that if one or two animals are affected, the whole herd will eventually be affected. The hogs may acquire it if running after tuberculous cattle.

Dr. Ward: Yes, we have traced the source of infection in that way. In one case where 72 hogs were condemned we vis-

ited the shipper and found he had lost one cow which he had fed to the hogs, and his hogs were allowed to run behind the cattle picking up the droppings, and I think 50 per cent. of the cattle were diseased.

Dr. Belton (Iowa): I wish to state a case in my experience. In one car of hogs there were 14 red hogs and they were all affected with tuberculosis. I was sent out to the farm from which the hogs were shipped and notified the owner. He had his cattle, 20 milk cows, tested, 14 of which reacted. He was running his own separator on the farm and feeding the milk just as it came from the separator.

Dr. Ward: I believe that tuberculosis is acquired, not through inhalation, but by way of the intestinal canal, and it is virtually the same in cattle.

Pres. Price: I would like to ask if there is any one present who has ever traced it up in this state to dairy-fed hogs.

Dr. Ward: Swift & Co.'s "hog-man" states that in the majority of cases of tuberculosis among swine it has been in those that were fed dairy products. They tell me that there is some peculiar smell among hogs that they can detect when they go among them as to whether they are dairy or corn-fed hogs.

Dr. Leech: I wish to ask Dr. Ward what the clinical symptoms are in swine?

Dr. Ward: Invariably you will find the submaxillary glands enlarged; in fact, you can detect it ante-mortem, if the glands are at all enlarged; the face is puffed out. The inspectors are thus able to recognize it, and immediately they notice any hogs showing that symptom the shipment is tagged.

Dr. Leech: Do you know whether it is found in the intestinal tract or lungs?

Dr. Ward: We have killed a number of hogs on the owners' premises and found the cervical glands infected, as well as the lungs, spleen, and almost every organ in the body. The disease in hogs seems to run an extremely rapid course.

Dr. Lees: Do these tuberculous hogs that are shipped in show any constitutional effects?

Dr. Ward: Not very often. The inspector may examine them and oftentimes the disease is not detected until the animal is on the floor.

Dr. Leech: Why are dairy-fed hogs more liable to be affected than corn-fed hogs? Is it the feed?

Dr. Ward: It comes from the feed by way of the intestinal

canal. Not only the majority of swine, but cattle, acquire it this way.

Pres. Price: Dr. Foster, have you any of it in South Dakota?

Dr. Foster: We have had very little of it, but suppose we will get it sooner or later when cattle are more plentiful.

Dr. Price: We will now call on Dr. Gould for report on

LEGISLATION AND EMPIRICS.

Dr. J. N. Gould: The committee is rather doubtful as to its duties on legislation and empirics. Now, as I am not the chairman, to begin with, I will admit that I do not have a lengthy report to make, and I was all at sea when the Secretary wrote me that I was to make such a report. I supposed the committee was to watch all legislation that might take place, all adverse legislation at least, and also take care of any proposed legislation for the benefit of the profession. In making a report to the Association twice a year it is pretty hard to find much material. The ground has been gone over pretty thoroughly ever since we had such a committee, and the amount of material at hand is rather meagre. I am not in position to know of prosecutions, only by accident. There have been none in my locality of late. I took occasion to write the different state associations that I could reach and received some very interesting replies regarding conditions of law in the different states. The general tone of the letters was to the effect that the laws were working satisfactorily. They were well observed, but of course there were frequent violations. I noticed among various things that were desirable features in the state laws, Nebraska, for instance, and I presume other states have the same, takes away the right to use the title of veterinarian, which Dr. Jensen said rather worried the men who started to practice without a license. Another feature that appealed to me was one in Illinois. There the Live Stock Commission has the enforcing of the law. It is the duty of the commission to appoint the veterinary examiners and prescribe the method under which they will be appointed, oversee the examination, issue the certificates, and it places the veterinarians in touch with the stockmen. It is the stockmen's law and for the benefit of the stockmen. The report was that it was working very satisfactorily and they did not contemplate any changes in the near future. Wisconsin was contemplating making some changes. I think if we have any further legislation, that the different features which I have mentioned should

be embodied in our laws. I think that possibly we ought to have an annual assessment, not over a dollar, as the druggists have. This is also in the veterinary law of Iowa. It provides funds for the enforcement of the law, and every veterinarian would gladly furnish that dollar every year. It provides protection, and the state examining board should have charge of enforcing the law and have funds to work with. I think in this state the law is working fairly well. If we stopped all illegal practice and got rid of the empirics there would not be enough veterinarians to do the work. If our present law prevents more empirics coming into the state, it is doing a good thing; and if we get stronger and more in touch with the legislators of the state, we will get a better law if we need it. There were one or two questions that I did not get any information on. One was the status of the Army Bill, whether or not we got anything through the last session. The other, the status of the appropriation to suppress Texas fever. There was some such provision before Congress for the National Government to provide a certain fund for the eradication of the Texas fever tick, and in those states that showed interest enough to provide a certain amount of funds, the Government was supplying part of the funds indirectly.

Dr. Price: Dr. Gould claims he has not paid much attention to his committee duties, but I think he has.

Dr. Ward: This committee should be divided into two; one on legislation and one on empirics. The members of the Examining Board should be the committee on empirics, because it is the duty of the Secretary of the Examining Board to prosecute.

Dr. J. N. Gould: There was one other provision that appealed to me, and that was the revoking of licenses for some specific cause, but of course allowing the person to be heard in his own defense. If I remember rightly, there is no such provision in our present law. If we had such a provision it would be all right, even though we did not use it.

Dr. Ward: The great trouble is that there are so few veterinarians in the state, and if we attempt any legislation whatever we shall find ourselves in trouble and the "veterinary practice act" open again, because there are a large number of unqualified men who are just waiting the opportunity; in fact, it has been our experience in every legislature since 1893, that there have been one or more bills introduced at every session looking to the reopening of "the veterinary practice act."

Dr. Leech: I consider it just as important to the veterinary profession as to any other profession that we should charge a fee of $1, and also the privilege of revoking a license for cause. That is the only way the druggists are able to hold their men. When a man gets his license from the Board of Examiners he goes away free and I have been told they have no right to question his license, and I believe he should pay $1 or $2, and by so doing they have a chance if a man does not live up to the line of the profession, to revoke the license. It is for the benefit of the profession.

Dr. J. N. Gould: At the present time, as I look at it, we are in a better position for a new law, but I believe we will be in a great deal better position in five or ten years, and as we have the door closed we never want to open it until we are ready to make an ideal law, and I think the longer we let it go the better law we will get. I think by the aid of the men in practice without diplomas and the veterinarians in practice within ten years we will be in line to get some nice legislation, and I believe, as Gov. Folk, of Missouri, said, that it is not so much a matter of more legislation, as it is of enforcing what we have. In Missouri they kept passing laws for years until the present Governor got in, and he does not seem to need any more legislation. The people of Missouri realize they have all the legislation they need when they have a man like Folk behind them. I think if our veterinarians see that the law is enforced we will have ample legislation for the present time.

Dr. Leech: I do not believe we need open up any law, simply an introduction of an amendment to the present law, and no amendment opens up the original. You haven't any chance, at the present time, even as the law reads, to regulate practice in Minnesota, because you have no hold of a man after he receives his certificate.

Dr. J. N. Gould: As far as that amendment is concerned, I think that is all right and probably it would not open up the law, but a few years ago we opened up the law by trying to get an amendment, and a lot of worthless men were allowed in. The general profession did not realize it and the committee did not either, and probably while that would never occur again, I believe that while we are doing well enough we ought not to try to do more.

Dr. Ward: That was simply an oversight and was a lesson to the profession of the state. The amendment was introduced and referred to the committee, and I think none of the profes-

sion attended the meeting when the amendment was up for hearing, and some of the committee had friends who were anxious to be admitted to practice, and one of the members anticipated introducing a bill reopening the veterinary practice act. It was an easy matter when the bill was under consideration for the member to suggest that this proviso be tacked onto the amendment. The amendment was reported to the House and none of the profession noticed it until it was up for its third reading and then it was too late. It taught this lesson, that if we introduce another bill or any legislation governing our "veterinary practice act" that we should watch it from the time it is handed to the legislator, through its course, until it comes up for final reading.

Dr. J. N. Gould: The Governor did not sign that amendment until he asked some member of the committee and was told that it was all right. A member of the Examining Board did not know that that proviso was in.

Dr. Ward: I would call attention to this: that there were over 300 applications for licenses and there were only eight or nine granted, and one of those has since graduated, and others are in such a position that they will do no harm to any one.

Pres. Price: I will say, as I have had more or less to do with every act passed by our state, that at every attempt we have made to have a bill passed, a lot of these empirics have slipped in in spite of every care, and the only way we could prevent that would be to pay some attorney to stay there and watch it. We are told everything is all right, and the minute our back is turned some friend of an empiric slips in and gets some amendment attached that allowed them to get in. If Dr. Leech thinks we should have an amendment he could put it in and have it acted on.

Dr. Leech: I think it would be a good plan that this committee take it up, and, if they saw fit, to spring this matter before the committee and have it acted upon later. From the standpoint of Dr. Ward, I do not think it would. It is the duty of the Legislative Committee to notify your committee so you can be there, and I do not see how these legislators who are 90 per cent. lawyers can tell what is right without a hearing.

Dr. J. N. Gould: There is a great deal of legislative work done not according to rule.

Pres. Price: I will call on Dr. English for information on the Army Bill.

Dr. English: I do not think the Army Bill was acted upon,

but we are in hopes it will be acted upon at the next session. The original bill was changed and was not as satisfactory as the veterinarians wished, but it was approved by the General Staff, which is a great help, and we are in hopes it will be taken up later.

Pres. Price: I think it is to the interest of every veterinarian in the state and country to try and help this Army Bill through. It will give the veterinarian a recognized standing in the country that is granted to him in every other first-class military country in the world, and there is no reason why we should not have it in this country.

Dr. English: The bill as it now stands gives no head to the veterinary profession in the Army. The bill as originally written would give three different veterinarians, who would be advisers to the staff. At present there is no head, of which they are certainly in need. I think one of the best things is that it makes the quarter-masters veterinarians, who are mostly empirics. It also gives some rank to the regular veterinarians.

Pres. Price: We will now call on Dr. Beebe for his report.

BACTERIOLOGY.

Dr. Beebe: During the last year there have been many articles pertaining to bacteriology published, but, however, many of these are not of particular interest to the practitioner. For instance, a large number of these articles are upon the theory of immunity, and are impossible to comprehend unless a person is familiar with all of the previous publications. There is a very good article in the *Journal of the American Medical Association* of April 12, 1906, upon the "Parasitism of the Tubercle Bacillus," by Theobald Smith. This article is particularly interesting to the veterinarian, because Smith has done a very large amount of work upon bovine tuberculosis, and refers many times to these investigations in his article. There is an article in *Monatschrift fur praktische Tierheilkunde* of Jan. 6, upon "Infectional Vaginal Catarrh of Cattle," by Thoms. This disease is quite prevalent in Germany, but never appeared in this country. The July number of the AMERICAN VETERINARY REVIEW contains a very good article by Schricker upon "Protective Inoculation Against Tuberculosis." During the last year many articles pertaining to South African diseases in horses and cattle appeared in the *Journal of Comparative Pathology and Therapeutics.* I thought it better not to give a list of these publications, as they are of very little interest to the

American veterinarian, but if you desire to read them you will find a number of articles scattered throughout the issues of this year. There are two new books published upon the theory of immunity, which are probably very good. As yet I have not had an opportunity to examine them. They are as follows: "Infection, Immunity, and Serum Therapy," by Htricketo; and "Serum, Toxins, and Vaccines," by W. C. Bosanquet. Recently Capt. Pallin, of the British Army, has published a book upon "Epizoötic Lymphangitis." In the *Journal of Infectious Diseases*, of Chicago, No. 3, Vol. III, there is a good article on "Etiology and Diagnosis," by Williams and Ludwin. I have tried to make this report brief by selecting the articles that will be of particular interest to the practicing veterinarian, and trust that they may be of some help to you.

Pres. Price: We have heard Dr. Beebe's report. Are there any questions?

INTERESTING DISCUSSION OF RABIES.

Dr. J. N. Gould: In sending specimens of a rabid animal, what is the best way?

Dr. Beebe: I think the best way is to cut the head off a few inches back of the neck and put it in a large candy pail and pack ice around it. In winter it will keep nicely without the ice.

Dr. Lees: I would like to ask Dr. Beebe under what conditions he would send back a report that the animal is rabid?

Dr. Beebe: For a long time we have been resorting to the inoculations of rabbits and then observing the symptoms, if they become sick after about twelve days. If they die within twelve days, it cannot be considered that the rabbits had rabies, because death is usually due to septicæmia; but if after the tenth day they showed typical symptoms of rabies we consider that the animal from which the brain was obtained was rabid. In many laboratories they are resorting to the finding of Negri bodies. A great many examinations have been made on other animals and people which have died of tetanus, and perhaps ten or twelve other diseases that are somewhat like rabies, and in no case have they been able to find these structures present in other diseases. I think if we find Negri bodies we are justified in saying the animal was rabid. Recently I have been diagnosing rabies by the finding of these bodies. This spring I had about 23 or 24 cases, and in almost every case found these bodies present.

Dr. Lees: In my district there have been a number of dogs

that ran through the country, and the head was sent up to the State Laboratory, and every time the report was that the animal was rabid. All those dogs presented the same symptoms, and have bitten all kinds of animals, but none of those animals have developed a case of rabies. I believe a dog can be affected with a nervous disease or some other disease that presents almost the same characteristic symptoms in the dog, but I do not believe it is rabies. I knew of a wolf that acted the same as these dogs. He was out from Cannon Falls and went into the yard where a dog was and attacked it. It went into the man's woodshed and bit the man. It bit four men in all, and they sent for me to run the wolf down with my dogs. I had two dogs bitten by that wolf, and they sent back a report from the Laboratory that the wolf was rabid. I tied up the dogs and expected to see them have rabies, and I have one of those dogs to-day. One man went to the Pasteur Institute and he did not have it. That wolf acted just the same as all these dogs do, and I am very much inclined to think that there is some nervous disease that shows these characteristic symptoms, but it is not rabies.

Dr. Beebe: We have only had one head from Goodhue County, and I think it was in April. The rabbits died showing the symptoms of rabies. I think a person has to take into consideration that there are quite a large number of animals that do not contract the disease after being bitten.

Dr. Lees: That dog, whose head was sent up to you in April, bit four horses, seven or eight dogs, and several hogs. The dog went into the yard where the children were and licked their faces and the children patted him, and the man patted the dog. He then went to chase out the hogs, and the dog bit the hogs.

Dr. Foster: I believe this in itself is spoken of as one of the symptoms of rabies, that they are more affectionate. I had a case of rabies last fall and I sent the head to Dr. Wesbrook. It was owned by a conductor, and I was called over to see the dog and was told that they did not know what the trouble was with the dog. The dog was in a play-room and the door had two large glass panels. I could see the dog, which was a black bird dog, and watched him a moment. He stood there wagging his tail and jumped up against the glass, and then he would seem to start and look from one side to the other and would run under the bed and come out in two or three seconds and look through the window, wag its tail if it saw the children,

run under the bed and chairs. He was very nervous, but that was about all there was wrong with him. I was rather suspicious, and asked if the dog had been bitten. The owner said he did not know, but his wife thought it was bothered with fleas. I told them not to go into the room, but leave the dog there. He asked the boys if the dog had been bitten and they said it had, when they went hunting the first of September, and it was then the middle of October. The next morning I was informed the dog was dead, and I went out there and found the lower part of the glass opaque from blood and saliva. The dog had chewed the woodwork as much as he could around the edges, and bit the window sash, tore the chairs and sofa, and his mouth was full of excelsior. I was positive that the dog had rabies, and asked if he had bitten any of the children. It seems he had bitten one of the little boys on Saturday night. I told them that I did not want to scare them unnecessarily, but thought it would be best to take the boy to Chicago at once. I packed the head of the dog and sent it to the Laboratory, and rabies was reported. We also found that the dog had bitten a neighbor's dog. We kept that dog confined, and it developed rabies, and I think it was about 42 days afterwards. Dr. Wesbrook reported that the rabbits developed rabies. The first report received from him was on the Negri bodies.

Dr. Lyons: I think 19 of the 20 bitten dogs, which I have lately seen, may not become rabid. About six weeks ago a dog in a neighborhood bit 20 or 25 dogs and also bit a horse three times. That horse, about ten days ago, showed every symptom of rabies and died. None of the dogs have shown a rabid symptom that we know of.

Dr. Amos: I think there is a great deal that depends on the condition of the animal when it bites and the condition of the saliva and the amount. I have had quite a little to do with rabies and will cite one case. A farmer had several cattle which were sick and he thought they were suffering from being turned into the corn-stalks. I went out, and, to my mind, they had unmistakable symptoms of hydrophobia, and I asked the man where the dog was that bit the cattle. He said he shot it. I asked if it had bitten anything else, and he said yes, and that he had his hand torn. That dog bit another dog which went over into a lot of hogs and sheep and over 20 odd sheep were torn, and not one developed any rabies. Of the cattle which the rabid dog bit, 17 out of 21 head died of hydrophobia. The same dog went over and bit several hogs and nearly every hog

died. I think that a great deal depends on the condition of the animal which does the biting.

Dr. Keys: I have had about 30 cases of rabies reported since the first of January.

Dr. Foster: Last spring there was an epidemic of rabies in Campbell Co., S. D., and three men were bitten by the same dog; the first man went to the Pasteur Institute and has never developed rabies, although he has not been well since. Then the dog went eight miles from there and into another man's yard, a Russian, and attacked his dog, and finally bit the old gentleman, and then his boy came out and it bit him. Neither went to the Pasteur Institute, and the boy died of rabies, but the man is still alive.

Dr. Price: I would say that I was bitten several years ago. I disinfected the wound thoroughly and used carbolic acid and everything else I had, but I decided I would take the treatment. While I was down there three cattle died which had been bitten by the dog within half an hour after it attacked me. An abrasion, no matter how slight, is dangerous. You must take into consideration whether it is a dog with worn teeth or sharp teeth. A dog with dull teeth might produce it in a person on uncovered portions of the body. If bitten through the clothes, they are a protection. The clothing protects by taking the virus off the teeth. The first animals bitten in a herd are more liable to succumb than those subsequently bitten. There are a great many considerations to be looked into. The other day I saw a report of a man sending the head of a dog into the Laboratory and the bacteriologist inoculated some rabbits, and at the end of 20 days sent back a report that it was not rabies. My own dog was bitten by a strange dog running down the street. I tied it up, and four weeks after it began scratching, and would cry so piteously I had to shoot it. Dr. Beebe got part of the head, I believe, and inoculations proved positively that the dog had rabies. I have seen the disease in all forms, and cannot say that I ever saw any two cases alike. I had two cases last winter which had stiff necks and it hurt them when you would turn the head, but there was something peculiar about those cases which I could not describe. There was no history of a bite, but I suspected rabies and I told the owners to tie up the dogs and bring them back in a day or two; these two dogs developed paralytic rabies on the second day, and the city laboratory got both of them. I have had others where there would be a lack of ability to support themselves. The limbs would

seem to give way under them. As I said, it develops in so many forms, that I do not care how expert a person is, they are liable to make a mistake in diagnosing the disease, and the only way we can tell is by inoculation, and it is our duty to always err on the safe side. Do not ever get it into your head that it is not rabies. Two little children were sacrificed just over the humane society poohpooing this idea.

Dr. Lyons: How long do you recommend tying up a dog after being bitten?

Pres. Price: It is very seldom a dog will develop it before the second week, yet it is advisable to tie a dog up as soon as possible after being bitten. We are not certain as to the period of incubation. It may be two months and it may be six months, and some have said two years. One doctor reports a case that ran three years, and there was no bite in between, in a human being. The only way to do is to act on the safe side.

Dr. J. N. Gould: What is the expense of the treatment for rabies?

Pres. Price: From $100 to $200 for treatment. There are a number of forms of treatment; in fact, there are more than I think you have any idea of. There is the inoculation of a weakened cord by exposure to the atmosphere; and then there is the intensive treatment given in cases of bites around the head. The average percentage of deaths from bites on the body through the clothing, 1 per cent.; on the hand and extremities, 16 per cent.; on the head and neck or the upper part of the body, runs as high as from 30 to 60 per cent. You see the percentage of deaths from rabies is very irregular. More people die from bites on the head than from bites on the hand. Bites on the hand are more dangerous than on the extremities. The nearer the brain the quicker it will develop. If bitten on the head, you cannot take treatment too quickly. The virus evidently travels along the course of the nerves. When bitten on the head they generally give the intensive treatment. They run you up as quickly as possible to the highest virus, then go back three days, and run up the second time, and then go back two days and then run up again. There are modifications of this treatment that are very interesting. Suppose your dog is bitten by a rabid dog, or a valuable horse is bitten. If you can secure the brain of that dog you can give him modified treatment, and the peculiar part of rabies is that the more virus you inject subcutaneously the less he is liable to develop rabies. Now, working

on that fact, you can take the brain and mix it with an antiseptic or make a solution of it and use that solution, administering an injection every day, gradually giving it stronger and stronger until you get an emulsion of the actual cord. Hoyge used that method, and others used modifications of it. There is no reason why animals could not be treated in that way, but I have never tried it.

Dr. J. N. Gould: Would an antiseptic weaken the virus?

Dr. Price: Yes, it weakens the virus. But carbolic acid is absolutely useless. While I was in Chicago, a boy died from hydrophobia. There had been a slight abrasion of the skin on the back of the hand and they had put pure carbolic acid on it, and yet that child developed rabies in a very short time. Investigations show that citric acid and creolin are the two most active destroyers of the virus.

Dr. Gould: Supposing a man had a valuable horse bitten, would it pay him to give that horse the treatment? Could he procure the treatment from the laboratory?

Dr. Price: Yes; it could be shipped down, for that matter.

Dr. Gould: The expense would not be so much greater than for a human being. Is it a fact that it is more difficult to find the Negri bodies in dogs that have been killed than in dogs that have died from rabies? In other words, if you suspect a dog is rabid and destroy him on suspicion, would it be more difficult to find the Negri bodies than if the dog was allowed to die from rabies?

Dr. Beebe: Yes, it is usually more difficult to find them. In some cases you can find them several days before the dog would naturally die. Nearly all that have been sent in have been from cases that have been killed. Occasionally there is a brain in which we cannot find the Negri bodies, even if the dog has died.

Dr. Gould: In making up the virus for human inoculation, do they use the substance from the brain of a rabbit that has recently died?

Dr. Price: In preparing the virus the first cord used is generally hung for 18 days in a flask in which there are particles of caustic soda that absorb the moisture, prevent decomposition, and enable the drying of the cord in the hottest weather; then they cut up this cord into sections and rub a portion of it with a little sterile water, about a cubic c.m., and inject it under the skin the first day. The next day they give a portion of the

cord which has only hung for 17 days, and so on until they get down to a cord hung only three days, and this is the strongest virus they use.

Dr. Gould: There does not seem to have been much work done along this line in animals by Pasteur.

Dr. Price: No, but he did work on cattle, and somebody else in France did some work. They found that injecting it intravenously in certain animals did act as a protective virus in place of producing the disease.

Dr. Beebe was asked to explain about the Negri bodies.

Dr. Beebe: They do not know definitely what they are. Negri in his original article suggested that they might be protozoa, and since that time a great many articles have appeared. Some hold they are protozoa and some that they are not. Some claim that they are only due to degeneration. There is good evidence to show that they are protozoa and good evidence to show that they are not. One thing that points negatively is that they take the acid stain and not the basic stain. Most protozoa take the basic stain, but these bodies take the acid stain. There are a few chromatin granules found in them that will take the basic stain, and some people have suggested that these bodies might be neuclei. Ludwin and Williams in their article claim that they have seen bodies that appear to be plastic; that is, the form might be changed by pressure, etc. It is hoped that in the near future the nature and significance of these studies can be determined.

Pres. Price: We have discussed this quite thoroughly, and I will call for Dr. Lipp's report, if there are no more questions.

Dr. Lipp was not present, but would be later.

Dr. J. N. Gould: I have received a circular recently from the Pasteur people in which there is a mention of curing glanders by the use of mallein.

Dr. Amos: That was not the Pasteur people. It was the New York veterinary correspondence school.

Pres. Price: I think we passed a resolution at the last meeting condemning the advertising of mallein as a curative agent. We have, I am sorry to say, the resignation of Dr. Butler before us, and I wish it to be read. Dr. Mack, the Secretary, then read the letter of resignation. It was moved and seconded that the resignation be accepted.

The meeting then adjourned.

The meeting was again called to order at 8 P. M.

Dr. Cotton's paper was then presented.

Dr. Price: We will now call on Dr. Lipp for his

REPORT ON MEDICINE.

Dr. Lipp: I shall confine my report to the mention of a few of the new books published during the last year. I do this not from lack of valuable material to review, but rather to be concise and adhere strictly to the program, and make this a report only. Several books will be mentioned that do not come under the subject of medicine, but since they are of high merit, and closely related to our subject, I shall take the liberty of mentioning them. Replies received from letters sent to three of the leading publishers of veterinary books served as the basis for this report. A new book on "Diseases of Cattle, Sheep, Goats and Swine," by Dr. Moussu, of the Alfort Veterinary College, and translated by Dr. Dollar, of London, is good. It includes surgery as well as medicine. There is a revised edition of Neuman's "Parasites and Parasitic Diseases." This is an old standard brought down to date. Both volumes of Hayes' translation of Friedberger and Fröhner's "Pathology and Therapeutics of Domestic Animals" are now ready. This translation is much superior to Zuill's translation. In Germany Friedberger and Fröhner are regarded as high standards of authority. There is a small book by Dr. R. A. Craig, of the Indiana Experiment Station, on "Diseases of Swine." A translation of Dr. Kitt's "General Veterinary Pathology" is at last ready. This is the only strictly veterinary pathology available in English. It is written by a man who has a world-wide reputation as a pathologist. A revised edition of Ostertag's "Meat Inspection" is just out. This is also a standard work, by a recognized authority on meat inspection. A revised edition of Moore's "Pathology of the Infectious Diseases of Animals" appeared last spring. There are revised editions also of Winslow's "Materia Medica" and Smith's "Veterinary Hygiene." There is a new "Veterinary Physiology," by Dr. Paton, of London. It is very brief and concise, but by a physiologist and teacher of experience. Those interested in tuberculosis will find much material in the Second Annual Report of the Henry Phipps Institute for study, treatment, and prevention of tuberculosis. The *Journal of Infectious Diseases* contains valuable articles, as do also the various veterinary and medical journals.

Dr. Price: You have now heard Dr. Lipp's report, and I will call on Dr. Dell for his paper.

"THE ANIMAL INDUSTRY IN THE PHILIPPINES.

By Harry Dell, D. V. S., U. S. Inspector, B. A. I., Mankato, Minn.
(Late Director Animal Industry Insular Bureau of Agriculture, Philippine Islands.)

"*Mr. President and Gentlemen of the Association:*

"When your Secretary informed me that I would have the privilege of addressing you I was somewhat at a loss for a subject. However, since my return from the Orient, I have been so frequently interrogated concerning the animal industry of the Philippines that it occurred to me that a brief *résumé* of the conditions prevailing there would be of interest.

"The present status of the animal industry in the Archipelago is not of the most encouraging nature nor do the opportunities for the animal husbandman in the islands appear as attractive or promising of success as in other fields.

"Numerous visitations of infectious and contagious diseases have in the past few years ravaged the islands, resulting in losses of a most deplorable nature among the draft, meat and milk producing animals. In some provinces reliable evidence is obtainable of the loss of 90 per cent. of the working animals. In consequence much of the available agricultural land lies idle and destitution prevails among the laboring classes.

"The animals which escaped infection or survived the attacks of disease are not as a rule those which would, under other conditions, have been selected for breeding purposes and recent importations of new animals have in most cases met with disaster.

"In addition the unsettled conditions prevailing in the islands previous to the American occupation were not calculated to encourage any desire or foster any efforts toward the improvement in quality or quantity of the live stock.

"Under the Spanish *régime* some desultory attempts were made, under government patronage, to establish breeding stations at different points throughout the islands, but the work was abandoned before any decided results were apparent.

"Chief in economic importance of the animals in the islands stands the carabao or water buffalo. These animals are of the bovine type, weighing about 1,500 lbs., of deliberate movement and possessed of immense horns. They are used in agricultural pursuits and for hauling heavy loads. As long as present methods of rice cultivation prevail and until road making in the provinces receives some attention, no other animal can or will dis-

place the carabao. The value of good ones has increased in three or four years from 15 pesos to 80 and 100 pesos per head.

"So urgent has the demand been for carabao that the civil government undertook the importation of 10,000 head from China and India. These were to be sold to the agriculturists at cost after immunization against rinderpest.

"Unfortunately these animals, while of semi-aquatic habits, are poor ocean travellers and many succumbed on the trip. In addition the first two shipments developed hæmorrhagic septicæmia shortly after arrival in Manila, from which a large per cent. died and those which recovered were unfit for service for a long time.

"Subsequent shipments developed surra and rinderpest and the contracts were finally annulled by the government and the project abandoned.

"While none of the domestic animals are, properly speaking, indigenous to the islands, the so-called native pony more nearly approximates a distinct type as the result of environment and haphazard breeding. Descended from animals brought over by the early Spaniards they still give evidence of their Castilian ancestry.

"They are small wiry little fellows, ranging in height from 45 to 50 inches, generally of good conformation and action and possessed of remarkable endurance. Good ones range in price from 100 to 350 pesos, while race ponies bring from 1,000 to 5,000 pesos.

"The males are seldom castrated, which necessitates constant watchfulness on the part of attendants in the stable and on the streets to prevent fighting.

"Owing to the scarcity of horses in the islands, several enterprising dealers undertook the importation of Manchurian ponies, but soon abandoned the plan. The Manchurians are larger than the native, of more clumsy build, with coarse heads, low set, and possessing treacherous dispositions. In addition they do not well stand the climate. The only cases of heat prostration in the horse which came under my notice while in the islands, was among animals of this breed.

"Most satisfactory results have been obtained from the introduction of Australian horses, the demand having greatly increased during the past three or four years. They approximate 15 hands in height, are of good style, action and conformation, and find ready sale at $300 to $500, gold.

"Horse racing is a regular attraction in Manila on Saturday

and Sunday afternoons. There are classes for native and Chinese ponies. The attendance is always large, and on account of its cosmopolitan character, at times quite demonstrative. The jockeys are usually Filipinos or mestizas and differ little from our own in America, save in point of color. Bookmaking is a regular feature at the tracks, and the omnipresent John Chinaman usually goes home with his capacious pockets filled with pesos.

"Throughout the islands very few cattle are to be seen. While they are called 'native' they differ in no material respect from their Australian or Chinese progenitors excepting that they have diminished in size.

"Dairying, outside of Manila, is practically not engaged in, the provincial fresh milk supply being for the most part derived from the carabao. In the environs of Manila are a few small dairy herds composed of Australian and Indian cattle. Fresh milk of the bovine variety finds ready sale at 50 to 60 cents gold per gallon.

"The Insular Bureau of Agriculture conducts a dairy in Manila to supply milk to the numerous hospitals of the city, the surplus being sold to residents. The cows are of mixed American and Australian breeding, and furnish milk of good quality.

"In general, however, the milk supply of the islands is of the canned variety, that being easy of transportation, hermetically sealed and free from the infective organisms peculiar to the Orient.

"There is little opportunity for dairying on a large scale outside of Manila, and there the high price of food stuffs and ice and the ever present liability of cattle to insidious infectious diseases make the undertaking a hazardous one from a financial standpoint.

"The meat supply of the islands is likewise largely of the canned variety. The fresh meat furnished the army and navy and that sold in the shops patronized by the American population is derived from Australia. Formerly this was sold at exorbitant prices, but of late conditions have changed owing to brisk competition among the dealers.

"The Spaniards and Filipinos do not, however, take kindly to the cold storage meats, preferring that freshly killed. The annual imports of beef cattle into the city of Manila amount to about $700,000. Other ports receiving beef animals in smaller quantities are Iloilo, Cebu and Zamboanga.

"This beef supply is almost entirely derived from China and Java. In Manila the slaughtering is done under the supervision of the Board of Health, the inspection including a daily examination of the butchers themselves before the work commences. Ante-mortem examination of the animals is made on board ship before unloading.

"The matadero or slaughtering establishment is situated on the water front. Killing begins at five o'clock in the evening and is completed by seven. The meat is air cooled and by four A. M. is exposed for sale at the various marcadas of the city.

"Post-mortem condemnations of cattle are principally for rinderpest. Tuberculosis is rare and actinomycosis is unknown. Large numbers of hogs are condemned for cysticercus cellulosa.

"In the provinces the killing of a beef animal is an event of much importance, usually assuming the nature of a barbecue and commemorating one of the numerous fiestas.

"In the smaller pueblos and barrios, the fresh meat supply consists almost entirely of pork and the flesh of goats. These animals are the scavengers around the houses and attend to that work most thoroughly. The hogs are of Chinese origin and resemble the fast disappearing razor back of our own South. In the Province of Tarlac some very large specimens were noticed, hog-raising in that vicinity having received more than usual attention.

"Castration is not usually practiced on the domestic animals, excepting in the case of the carabao, the crushing method being employed to render him more docile.

"The animal diseases prevailing in the islands are sufficiently numerous to make it a large field for the bacteriological investigator. Chief in economic importance are surra, rinderpest, hæmorrhagic septicæmia, epizoötic lymphangitis, glanders and tick fever. Tetanus is very common in some localities.

"The external parasites are legion, including many varieties of ticks and biting flies. The screw worm fly (*Compsomia macellaria*) is the cause of much suffering among animals and occasionally attacks the natives.

"Most of the veterinarians in the island are employed by the civil or military government. A few are engaged in private practice in Manila.

"In the Army are the regular army veterinarians and the civilians attached to the Quartermasters' Department. Under the civil government the veterinary force originally consisted of the Director of Animal Industry, Bureau of Agriculture, in

charge of animal husbandry; Chief Veterinarian, Board of Health, and eight assistants, charged with the control and eradication of contagious diseases; veterinarian to the Serum Institute, and one veterinary inspector of the Philippine Constabulary.

"The force has recently been reorganized more nearly along the lines of our own Bureau.

"The civil government has recently built and equipped in Manila one of the most complete laboratories in the world, and with the existing field for research and the strong *personnel* engaged in the work, in a short time it is hoped that the diseases which now militate so powerfully against animal raising will have been brought under subjection, and that the industry will assume proportions in keeping with the population and increasing intelligence of the islands."

Dr. Lyford presented his report on surgery, which is published in this number of the REVIEW in the department for "Original Articles."

DISCUSSION OF OPERATION FOR BOG SPAVIN.

Dr. Leech: Dr. Lyford tells us about Dr. Hughes' operation, and I have been waiting about four years to hear Dr. Lyford's opinion of this.

Dr. Lyford: I think we ought to hear more of Dr. Hughes' method. As far as this operation is concerned it seems very feasible. I will admit that I have always felt a little like hoodooing the "blood spavin." Last winter I saw a great many operations by Dr. Hughes and Dr. Merillat. Dr. Hughes asked me if I had performed that operation and what I thought of it. He said that until he had looked up the old idea of blood spavin, back fifty or a hundred years ago, it never occurred to him until he did this operation, and found that the blood spavin disappeared. He thought the "old fellows" knew something of blood spavin. A great many of those things out of date are of importance to us if we look at them in the right light. I think Dr. Hughes' operations have come from accidents. Neither have they all been caused by non-graduates, but as a horse meets with an accident every day. I have seen cases where splinters have penetrated the bursa and I put a blister on immediately and with irritation you get union; you keep out the air and the germs, and bood poisoning is prevented. If we can do that in a runaway or accident, why not do it surgically and get good results? When in Iowa a year ago, Dr. Heck, of West Liberty, was telling me of a farmer who was willing to operate

on anything, and as Dr. Heck was at the farm doing some other work the farmer insisted on having the Doctor open a bog spavin on a yearling colt, saying he thought perhaps Dr. Heck would not cut as many bloodvessels as he had done, and then showed the Doctor a two-year-old on which the farmer had operated the year before. Though he admitted the colt nearly bled to death, he had succeeded in stopping hæmorrhage by bandaging the hock with cloth, and wrapping binding twine tightly around the cloth. The rags and twine were left on the leg for a week, fearing further bleeding. The colt had made a fine recovery and was well and sound except scar on back tendons from wrapping twine having been too tightly drawn or left too long without removing. Still Dr. Heck hesitated, but the farmer insisted, so Dr. Heck made an incision one and one-half inches long, vertically, on inside of hock, passing bistoury into bursa so that the hock was completely drenched, and with as strictly antiseptic conditions as possible the joint was covered with absorbent cotton and bandaged tightly. The Doctor did not see the colt again for two months, when it was seen at pasture apparently in the best of health and having completely recovered, with no indications of a bog and scarcely any scar noticeable. The Doctor says that during his operation there was no hæmorrhage. Reports have come from several others on just about the same thing, and I know that if you close the hole up immediately, you avoid serious complications. The irritation probably has destroyed to a certain extent the secretion. Possibly a certain amount comes from cutting off the blood supply. If you may cut one or more branches I feel that it is more surgical to do it (where you can) when it looks favorable and safe. No doubt many of you have had the experience I have of seeing things cured by accident. I want to say here that I have found hot water one of the best antiseptics that I can use. Either with instruments, wounds, or other things, the more hot water you use and the less you depend on creolins the surer you will get on without having blood poisoning. I believe the man who puts the hot applications on does more good than the man who puts on creolin and like emulsions.

Dr. Gould asked concerning the branches.

Dr. Lyford: I have not looked up those branches. I intended to dissect them out myself. Dr. Hughes said that they were so small they did not amount to much and caused but little trouble when ligatured. It is a small branch that furnishes

the hock and may be in some cases larger than in others. He says it is quite easy to detect. He also says he just ties a ligature around the artery and nerve and gets better results than if he did much cutting. It is comparatively a simple operation. The branch is easily found.

Dr. J. N. Gould: A farmer had a case of enlarged hock and he decided he would stick his knife through it; the vein was cut and the horse nearly bled to death. He not only opened the vein, but the joint, yet the horse made a nice recovery.

Dr. Foster: It seems to me that there is a little mix-up in regard to the spavin. You speak of blood spavin and bog spavin. I cannot see how opening that could be performed with impunity.

Dr. Lyford: I say it is often performed successfully.

Dr. Foster: What constitutes the cure? It seems to me you would have a stiff joint.

Dr. Lyford: The question is, what it destroys? If we have no lameness after treatment it is a success. As Dr. Hughes says, the blood and the bog, so-called, may be simply a variety of the same thing. You may have both. If the bog is the result of an increased and enlarged vessel and the ligature destroys that secretion, why is it not correct to destroy the vessel?

Dr. Price: I will call on Dr. Mackey, who has seen this operation performed, to tell us what information he gained.

Dr. Mackey: I have seen Dr. Henck on what he called the ligation of the posterior branch of the vein. One mare had a large hock on one leg and he fired the bog-spavin and ligated the vein both above and below the hock. He brought the same mare in afterwards; the bog-spavin was about one-third the size it was before. There was no scar and you would have to look closely to see it. He only makes the incision one-third of an inch long. He cuts off the nerve supply and the circulation and absorption takes place to such an extent that it makes the enlargement smaller.

Dr. J. N. Gould: Just what is that vein?

Dr. Mackey: It is what he calls the posterior branch of the *tarsal vein.* It can be followed right through and located below the hock also.

NEW MEMBERS ELECTED.

Dr. Price: We will now take up the applications for membership, which should have come in the morning session, but which we were unable to secure on account of the Examining

Board not being through. The applicants are all graduates of colleges, and have passed the Veterinary Medical Board of Examiners of this state.

The Secretary then read the following names of applicants:

Edwin Mackey (C. V. C., 1906); vouchers, Drs. S. H. Ward and Lambert.

R. J. Coffeen (C. V. C.,); vouchers, Drs. S. H. Ward and D. M. McDonald.

G. E. Metzger (C.V. C., 1906); vouchers, Drs. M. J. Sexton and C. E. Cotton.

J. F. Mack (McKillip, 1906); vouchers, Drs. R. Price and D. M. McDonald.

R. J. Philp (Ont. V. C., 1905); vouchers, Drs. Harry Dell and M. H. Reynolds.

C. B. Estey (McKillip, 1906); vouchers, Drs. C. A. Mack and S. H. Ward.

Henry N. Thompson (McKillip, 1906); vouchers, Drs. A. A. Keys and C. E. Cotton.

It was moved, seconded and carried that the Association act collectively on these applications. Upon a vote being taken all the above were admitted to membership, and were then called in and introduced to the other members.

Dr. Price made the announcement that the clinic would be held the following morning at the University Veterinary Hospital.

The meeting then adjourned. C. A. MACK, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The November meeting of this Association was held on the evening of the 7th, in the lecture room of the New York–American Veterinary College, with President Roscoe R. Bell in the chair, and Secretary D. J. Mangan, recording.

The room was well filled with members, visitors and students, the splendid program announced attracting veterinarians from the city and adjacent territory, demonstrating the proposition that the magnet to bring veterinarians together is the provision of a program which they cannot afford to ignore.

The guests of the evening were Drs. Simon Harger, of Philadelphia, and Frank H. Miller, of New York City, besides announced papers by Drs. F. C. Grenside and Charles E. Clayton, of the membership.

At the March meeting Dr. Miller exhibited an interesting little animal, in the shape of a King Charles spaniel, who was affected with a peculiar nervous condition, in which he would involuntarily roll to the right. He could not stand, and under any excitation would roll over and over toward the right, but when quiet could rest upon his sternum if propped up. At the request of the President, Dr. Miller again exhibited this patient, and gave an interesting description of his symptoms and tedious recovery subsequent to the March meeting. The "forced movements" had entirely subsided, but in their place a moderate degree of chorea was present, which was scarcely noticeable when devoid of excitement, but aggravated when frightened.

Dr. Harger had prepared a paper detailing the method being pursued by the Pennsylvania State Live Stock Sanitary Board in its campaign against the recent extensive outbreak of glanders in that State, and which is directly under his supervision. It was a most comprehensive statement of the work being done and some very valuable deductions were made as to the test with mallein, and the status of ceased reactors. It excited a lengthy discussion, participated in by Drs. Berns, Ackerman, Clayton, Mangan, and others.

Dr. Miller brought before the meeting a most complete history and post-mortem findings in a case of rabies in a dog; an interesting feature being that, although the brain was furnished to the laboratory in an advanced state of decomposition, no difficulty was experienced in finding Negri bodies in profusion, which confirmed the very suspicious history and symptoms as described by the owner in a letter which Dr. Miller read.

Following Dr. Miller, Dr. Charles E. Clayton presented some interesting case reports, emphasized and rendered more valuable by a display of specimens from the subjects. One of these was an ankylosed hock joint, surrounded by an enormous bone spavin, a fit one to adorn a museum of curiosities. Then the fragments of the os suffraginus of a horse fractured into pieces no larger than a silver quarter, and which had occurred with very slight provocation.

The discussions had been so general that the hour was well advanced, and, as there were a number of applications for membership to be acted upon they were taken up. Five gentlemen were elected, which is a most healthy symptom of interest in the organization. They were: Drs. R. E. Waters, Gravesend; C. S. Chase, Bay Shore; C. N. Darke, A. J. Wood, and M. F. Henry, New York City.

On account of the lateness of the hour, and at the suggestion of the author, Dr. Grenside's paper was deferred until the next meeting, as well as a number of papers in the "question box."

For the December meeting, Dr. Richard P. Lyman, of Hartford, Conn., will read a paper on "Differentiating and Treating Intestinal Disorders in Solipeds;" Dr. Grenside on "Action in Horses;" Dr. Ackerman, "Case Reports in Canine Medicine." There are also a large number of questions in the "box" for discussion. (R. R. B.)

AMERICAN VETERINARY MEDICAL ASSOCIATION.

CHANGE OF DATES FOR MEETING.

Secretary Lyman notifies the membership through the REVIEW that the next meeting of the A. V. M. A. will be held on September 10, 11, 12 and 13, 1907. This is the choice of the members as expressed by the recent postal vote. The Secretary summarizes the vote as follows: Members in good standing, 612. Total vote cast, 309; total number failing to vote, 305. Total number voting "Yes," 274; total number voting "No," 26; number who expressed choice but failed to sign name, 2; signed name but expressed no choice, 7.

NEW YORK STATE V. M. SOCIETY.

President Williams has appointed the following Committee of Arrangements for the meeting of 1907, which will be held in New York City: Drs. Charles E. Clayton (Chairman), J. E. Ryder, George H. Berns and Roscoe R. Bell.

THE AUTOMOBILE SUPERCEDING THE HORSE.—*Jones:* "Veterinary surgeons, horse breeders, dealers and lovers of the horse are always trying to make it appear that the auto is not taking the place of that noble animal; but I say that it is, in everything; why, the other morning at my boarding-house, I found a piece of rubber tire in my sausage."

DR. J. G. RUTHERFORD, Veterinary Director-General and Live Stock Commissioner of Canada, was recently reëlected President of St. Andrew's Society of Canada, a powerful organization of the sons of Scotia in that dominion. There was an active contest for the honor of presiding over its meetings, but the versatile veterinarian prevailed over his opponents in this as in most other fields.

NEWS AND ITEMS.

DR. E. C. ROSS, of New Haven, Conn., is spending the winter in Daytona, Florida.

DARWIN asserted that there is insanity among animals just as there is among people.

DR. C. A. KRAUSE, Inspector B. A. I., has been transferred from Salisbury, Mo., to North Fort Worth, Texas.

SECRETARY HAL C. SIMPSON, of the Iowa Association, recently suffered a painful accident by spraining his ankle.

READ the valuable discussion on rabies in the report of the last meeting of the Minnesota Association, published elsewhere.

THE CHICAGO HORSE SHOW, contrary to some predictions, was largely attended and the program enthusiastically carried out.

DR. J. H. MCNEIL, of Ames, Iowa, and Dr. J. H. Gain, of Nebraska, were the veterinary inspectors at the recent Omaha Horse Show.

"I HAND you herewith my renewal of subscription to the *indispensable* REVIEW."—*(Geo. W. Turner, Vet. U. S. Army, Highwood, Ill.)*

CEDAR RAPIDS, Neb., needs a good graduate veterinarian. Also Wayne, Neb., Dr. W. A. Hammond having moved to Blair, same state.

DRS. G. R. WHITE and JOSEPH PLASKETT served in the capacity of official veterinarians to the Tennessee State Fair, which was recently held in Nashville.

CHARLES B. BANKS (Harvard '97), formerly of Lowell, Mass., has located at Memphis, Tenn., where he has established himself in a new hospital for large and small animals.

DR. W. D. WRIGHT, former Meat Inspector at Fort Worth, Texas, who was transferred to the Philippine Insular Service, has been invalided home on a five months' vacation leave to recuperate.

"THE LARGEST MULE IN THE WORLD," so it is said, is owned by Luke Emerson, of Bowling Green, Mo. She is called "Missouri Queen" and stands 18½ hands high and weighs 2,260 pounds.

DRS. M. H. MCKILLIP AND L. A. MERILLAT, of Chicago, and Geo. W. Turner, U. S. Army, Highwood, Ill., were the veterinary inspectors of the Chicago Horse Show, held at the Coliseum, Oct. 29 to Nov. 3.

G. A. KAY., M. D. C., has removed from Avoca, Iowa, to

Boulder, Colorado, where he has engaged in practice. The primary object of the change was for the benefit of his health, which has greatly improved at his new location.

DR. D. ARTHUR HUGHES, Veterinary Inspector, Subsistence Department, U. S. Army, will address the medical men of Omaha, Neb., at the Commercial Club, during the winter on a subject of interest to students of comparative medicine.

THE MCKILLIP VETERINARY COLLEGE has over two hundred students enrolled for the present session. There are eighteen in the night course. Only freshman work is given at night, which is stated to be as satisfactory as the day course. The junior night course has been dropped.

HORSE BREEDING is being greatly encouraged by the government in Japan. A sum of $375,000 has lately been made available by the Mikado's government for the establishment of public studs at various points in the island empire and it is proposed to begin at once the purchase of 1,500 stallions to be placed in these public depots.

DR. T. S. CHILDS, of Saratoga Springs, N. Y., has retired from general practice and removed to California, where he will remain for the winter and permanently if he likes the country. His headquarters will be at the Oakland race-track, Emeryville, where he will maintain a stable of high-class horses, which will be in charge of Sandy McNaughton, the well-known trainer.

DR. W. P. ELLENBERGER, formerly of Cincinnati, Ohio, is busily engaged in directing the work of the Bureau of Animal Industry in the South, with headquarters at Nashville, Tennessee. He has twenty-five veterinary inspectors on his force and they are making much headway toward Texas fever and tick eradication. Dr. Ellenberger and his force of inspectors also have charge of Southern cattle transportation.

DR. W. E. MCGARTH, professor of meat inspection at McKillip's, which position he has held since the organization of the college, resigned October 1. Increase in his duties as chief meat inspector for Illinois demanded his dropping his college work. Dr. Milnes has been procured to fill the position made vacant by Dr. McGarth's resignation. Dr. Milnes has had 9 years experience as federal meat inspector, and is thoroughly familiar with all the departments of the work. Being an able and conscientious worker, it is expected that he will keep the department of meat inspection of the college on the high plane it has heretofore occupied.

"ALTERATIVE."— A "Subscriber" wishes the REVIEW to

define the word "*alterative*" as applied to the action of certain medicines. The "National Medical Dictionary" says: "A remedy improving the nutrition of the body without exerting any very perceptible action on individual organs." "Dunglison's Medical Dictionary" gives substantially the same definition, and adds: "As medicine improves, this uncertain class of remedies becomes, of necessity, diminished in number."

ROBERT GREEN, better known as "Uncle Bob," and familiar to every one who knows anything about famous old Belle Meade Stock Farm, Nashville, Tenn. (where the A. V. M. A. spent such a pleasant afternoon on the occasion of the visit to Nashville in 1897), is dead. He had been master of the stud since its establishment, and all the famous sires of Belle Meade were his especial care. The members of the A. V. M. A. will remember with what pride he led out and exhibited his distinguished charges.

DRS. F. C. CATER AND L. B. HUFF, after obtaining their degrees from the Kansas City Veterinary College in 1904, engaged with the government to go to the Philippines, one as contract veterinarian in the Army, stationed at Fort McKinley, the other with the Department of Agriculture at Manila. Their terms of service having expired, they returned to the States by way of the Suez canal, arriving at Newport News the first of November, and after spending a few days at Washington, came to New York, where they made a pleasant call at the REVIEW office. Dr. Huff expected to take a carload of mules to Cuba from Newport News before returning to his home in St. Joseph, Mo. The young veterinarians were fully pleased with all they had seen and experienced, but did not care to continue longer in the Far East.

COWS EAT TOBACCO STALKS WITH IMPUNITY.—*Kent, Conn., Nov. 11.*—The cows in this part of Connecticut are a progressive lot. Early in the fall they nearly all had stomachache from eating too many apples. Now they have got to chewing tobacco. "Goshang it," said Bill Parcells, "they'll be smokin' cigarettes next. There's too much education floatin' around. I'm off." Old man Roberts, who has a tobacco plantation near South Spectacle Lake, introduced the chewing habit among the cows. After he had cut his tobacco he turned his Jerseys into the field to see if they would eat the stalks. For years the farmers had been afraid to do it, but Roberts said he'd take the chance, as it was a shame to let such big green stalks go to waste. Roberts' cows ate all the stalks and mooed for

more. Their milk was not affected, either in color or taste. The good news spread, and now everybody's cows in the Housatonic Valley are chewing the real cud. The only thing is that when the cows chew too much they grow a little bit cross-eyed and their mouths hitch up at one side. This is supposed to be a nervous affection. They also have a strong breath, which is to be analyzed by a professor from Yale.—*(New York World, Nov. 12.)*

THE SCANDAL IN THE VERMONT CATTLE COMMISSION.—*Burlington, Vt., Nov. 1.*—The Chettenden County Grand Jury has returned indictments against Dr. F. A. Rich, of this city, and Victor I. Spear, of Randolph, former members of the State Cattle Commission. They are charged with willful neglect of duty, and it is specially stated that they sold tubercular cattle to the Consolidated Rendering Company. The cattle were sold, the Grand Jury finds, with the full knowledge of the commissioners that they were diseased and were to be used for food purposes. The Grand Jury also reported eight indictments containing eight hundred counts, four against the Consolidated Rendering Company and four against L. E. Brigham, manager of the Burlington Rendering Company. The indictments against both are identical and charge: first, the sale of diseased meat; second, the sale of a diseased cow; third, the possession of meat of a calf under four weeks of age, for the purpose of shipping it out of the state; four, the possession of the body of a calf, to be sold for food purposes. The Consolidated Rendering Company was found guilty of contempt and fined $3,000 by Judge Rowell. It failed to produce before the Grand Jury certain papers and memoranda called for. Counsel for the defendant said the papers had been destroyed prior to the investigation.

CROSS BREEDING BETWEEN THE GENUS OVIS AND THE GENUS SUS.—The following letter from Claudio Dunning, Hidalgo, Mexico, to the *Breeder's Gazette* of Oct. 23, explains itself: "Is it generally known that a ram can be crossed on a sow and not only produce pigs, but that the get will reproduce its kind? I have been handling stock all my life as a breeder, but never heard of such a thing until I came to this country, eleven years ago, and for a long time would not believe it and did not in fact until I personally saw it demonstrated. It is a common practice here among the poor people who want to improve their hogs. The cross is much larger than the common breed of hogs and large for any breed and they are slow to mature, not

being grown until they are two and a half years old. They grow very tall and their hair is very curly and fine, but otherwise they are just like the hog. The ram used is taken away from the rest of the sheep when it is small and not allowed to be with them again, but kept running with the hogs all the time."—[The editor of the *Gazette*, commenting upon the letter of its correspondent, says: "This seemingly unnatural cross has been made the subject of record in these columns. This cross-bred animal is called the cuino." The REVIEW would like to obtain the evidence of any veterinarian who has observed the fruition of the cross of these two genera.]

FREE WINTER COURSE IN DAIRY FARMING.—The Massachusetts Agricultural College offers without charge for tuition a general course of instruction in the management of a dairy farm and in dairy operations. This course begins January 2d and continues 10 weeks. It is open to all citizens of the United States above 16 years of age. Students taking this course enjoy the great advantage of a systematic though short course of training under recognized experts. The subjects taken up are soils, manures, fertilizers, and crops; the breeds and breeding of dairy stock; the feeding of dairy animals; stable construction and sanitation; prevention and treatment of the common diseases of stock; dairy products, their general characteristics and the laws of milk production; pasteurization; elementary botany and entomology, and general horticulture. Students receive careful training and extensive practice in the use of separators, making the Babcock test, and in butter making. All wideawake communities are demanding better dairy products. Students taking this course learn how to make the necessary improvements in methods of production. The demand for farm superintendents is great, but only up-to-date superintendents are wanted. Those taking this course are able to learn the latest methods. Dr. James B. Paige instructs in the common diseases of stock, and stable construction and sanitation. Any one desiring information concerning the course should address Prof. William P. Brooks, Amherst.

A WONDERFUL GRASS FOR BREEDERS.—Mr. B. Harrison, writing to the Brooklyn (N. Y.) *Eagle*, from Burringbar, Tweed River, N. S. W., Australia, under date of September 15, says: "All stock owners are aware of the great value of good fodder plants, and after many years' experience and observation of this marvellous grass, which appears to thrive well and yield abundantly in all soils and situations, I do not think I can make a

mistake in saying that to your graziers and dairy farmers it would prove one of the greatest boons with which they could possibly become acquainted. After about twelve years experience Paspalum Dilattum has become the favorite grass with the farmers on the north coast of New South Wales, Australia, and to the dairyman especially it has proved a veritable mine of wealth, and can be converted, if necessary, into hay, ensilage or chaff. It produces an immense amount of succulent herbage, which is eagerly relished by all stock, grows from five feet to ten feet high, bears a large quantity of seed, which can readily be disposed of at a good price and thrives well almost anywhere. No other grass can equal it for rapid growth, quantity and quality of herbage, and its adaptability to almost any soil or climate, and the person who introduces this grass into his district will prove a benefactor not only to the locality in which he resides, but the country generally. Any land on which paspalum is established is worth from $10 to $100 per acre. Once established, this grass remains permanent for all time, and saves the farmer from the great annual expense entailed in the purchase and cultivation of other grass seeds. It has been known to yield on cultivated ground, when four months old, 22 tons of green fodder, and several successive cuttings of over 13 tons each per acre within the year. On fairly rich soil where there is a good rainfall this grass should easily sustain one bullock, or ten sheep per acre, and from 50 to 100 pigs could be kept in good condition on a few acres with the addition of some skim milk or other feed. All persons who have used it for this purpose speak very highly of it."

MOLASSES FOR HORSES.—Scientific tests in substituting molasses for oats and other cereals in feeding horses have yielded surprising results. It is now definitely established that as a horse diet there is magic in molasses. With this syrup on his bill of fare the horse rapidly takes on solid weight, develops prodigiously in muscular energy, grows a glossy coat and enjoys uninterrupted health. For these animals, therefore, molasses is declared to be both a tonic and health food. In addition to the many desirable results, a molasses diet reduces the cost of horse maintenance twenty-five per cent. For scientific experimentation two abject and unthrifty animals were selected. One weighed nine hundred pounds and the other nine hundred and forty pounds. No preparation was made for the sudden change of diet, but in place of the usual allowance of hay and oats the horses were given three times a day one

quart of molasses diluted with three quarts of water mixed with five pounds of cut hay. A marvelous improvement in the animals resulted. In two weeks one gained forty pounds in weight and the other forty-five. In four weeks from the beginning of the molasses diet horse No. 1 gained ninety-five pounds and horse No. 2, one hundred and two pounds. Both of these horses were shedding their coats and after six weeks of molasses régime their new coats were glossy and luxuriant. Horse No. 1 at the end of that period weighed one thousand and seventy-five pounds and No. 2, one thousand and eighty-six pounds. All symptoms of decrepitude disappeared. At the termination of the six weeks experiment the animals could not be recognized as the forlorn creatures with which the tests had been begun. In place of those jaded specimens there were led forth from the stables two fine horses, the scientists describing them to be "full of play, life and energy." The animals were afterwards employed profitably for city work. These and such like tests are extending the use of molasses as a food for horses. Firms employing many horses in the hardest kind of contract and truck work are discovering that the animals will perform more service and remain in better condition on a diet of molasses than when fed the choicest and most liberal allowance of cereals. In the United States artillery corps there are enthusiastic champions of molasses as a horse diet, and horses in the armies of France, Germany and Austria are being fed on molasses with very satisfactory results. Quite recently tests have been conducted to determine what efficiency molasses might have in restoring invalid horses to health. A gelding greatly reduced as the result of a severe accident, and a lame and ailing truck horse were selected. At the beginning of the experiments the gelding weighed one thousand two hundred and fifty pounds and the truck horse one thousand one hundred and forty pounds. Fed on a diet chiefly consisting of molasses, the invalid horses improved with marked rapidity. In fifteen days the gelding weighed one thousand three hundred and twenty pounds, having gained seventy pounds. In that same period the sick truck horse gained sixty pounds. The total gain of the gelding in one month was two hundred pounds and of the truck horse one hundred and ten pounds. The conclusion that eminent specialists have arrived at is that good molasses is not only a fattening and energy-producing diet for horses, but that in many cases it will restore ailing animals to health.—*(American Cultivator).*

VETERINARY MEDICAL ASSOCIATION MEETINGS.

Secretaries are requested to see that their organizations are properly included in the following list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 10-13, '07.	Kan. City, Mo.	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	Jan. 10, 1907.	Jersey City.	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tu. Feb., '07	Hartford.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y....	Sept., 1907.	New York City	G. T. Stone, Binghamton.
Schuylkill Valley V. M. A. .	Dec. 19	Reading.	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Monthly.	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.	.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet. Med. Ass'n.....	.....	.....	R. E. Freeman, Dexter.
Central Canada V. Ass'n.....	.....	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n...	Feb., 1907.	Lansing.	Judson Black, Richmond.
Alumni Ass'n N. Y.-A. V. C..	April, 1907.	141 W. 54th St	W. C. Miller, N Y. City.
Illinois State V. M. Ass'n.....	Dec. 4-5, 1906.	Chicago.	F. H. Barr, Pana.
Wisconsin Soc. Vet. Grad.....	Call of Pres't.	Sheboygan.	S. Beattie, Madison.
Illinois V. M. and Surg. A....	.....	Decatur.	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba.....	Not Stated.	Winnipeg.	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n...	.....	.....	C. J. Fleming, Winston-Salem
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	Dec. 5, 1906.	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.....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n...	.....	Rochester.	J. H. Taylor, Henrietta, N. Y.
Iowa State V. M. Ass'n.....	.....	.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n..	Jan. 9-10, '07.	St. Paul.	C. A. Mack, Stillwater.
Pennsylvania State V. M. A...	March 5-6, '07	Philadelphia.	C. J. Marshall, Philadelphia
Keystone V. M. Ass'n.....	Monthly.	Philadelphia.	A. W. Ormeston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n...	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	Feb. 18-19, '07.	Kan. City, Mo.	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n....	June and Dec.	Providence.	T. E. Robinson, Westerly, R. I.
North Dakota V. M. Ass'n....	.....	.....	J. A. Winsloe, Cooperstown.
California State V. M. Ass'n...	Mch. Je. Sep, Dc	San Francisco	C. H. Blemer, San Francisco.
Southern Auxiliary of California State V. M. Ass'n....	Jan. Apl. Jy, Oct.	Los Angeles.	J. A. Edmons, Los Angeles.
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	Hans Jenson, Weeping Water
Kansas State V. M. Ass'n....	Jan. 8-9, '07.	Topeka.	Hugh S. Maxwell, Salina.
Ass'n Médécale Veternaire Francaise "Laval,".....	1st & 3d Thur. of each month.	Lect. R'm Laval Un'y Mon.	J. P. A. Houde, Montreal.
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, Rigand, P. Q.
Kentucky V. M. Ass'n.....	.....	.....	D. A. Piatt, Lexington.
Washington State Col. V. M. A.	Monthly.	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association.	Jan. 3. '07.	Indianapolis.	E. M. Bronson, Indianapolis.
Iowa-Nebraska V. M. Ass'n..	.....	.....	A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n..	.....	.....	E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	.....	.....	S. H Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A....	.....	Cincinnati.	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n..	.....	.....	J. C. Robert, Agricultural Col.
Georgia State V. M. A.....	Dec. 27, 1906.	Atlanta.	L C. Willoughby. Experiment
Soc. Vet. Alumni Univ. Penn..	June, 1907.	Philadelphia, Pa.	B. T. Woodward, B. A. I., Chicago.

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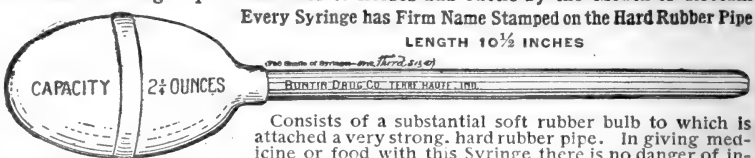

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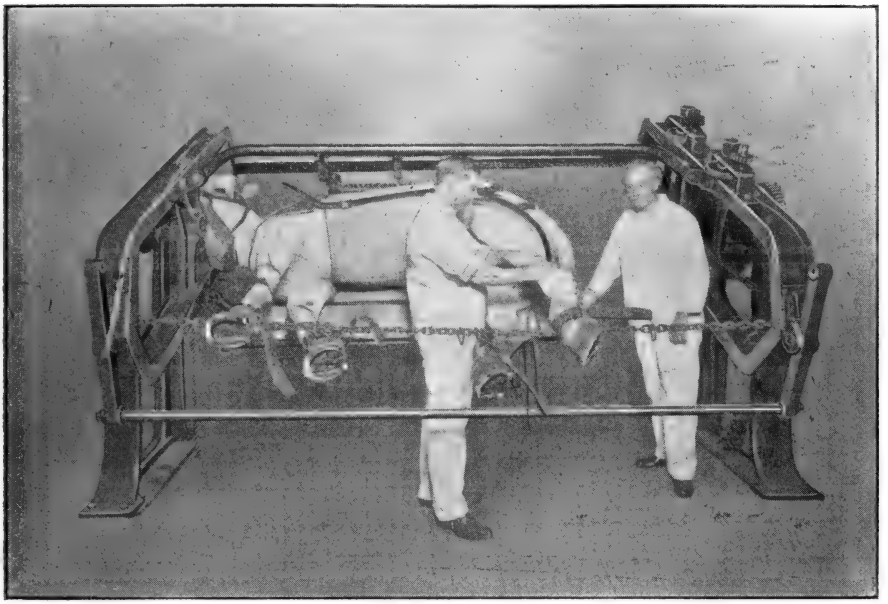

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No.

AMERICAN VETERINARY REVIEW.

JANUARY, 1907.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, November 15, 1906.

CONTAGIOUS ABORTION.—The National Veterinary Association of England at its last meeting received a communication from Prof. Bang, of Copenhagen, in which the subject of infectious abortion in cattle was considered and which was reproduced in the *Journal of Comparative Pathology and Therapeutics*.

After reviewing preceding communications of his own, the Professor reconsidered the question of the pathology of the disease and established the fact of its positive nature—that is, the evidence that it is due to a bacillus, which is always found, whether in the discharge or within the genital organs or on the mucous membrane. "In killing pregnant cows showing premonitory symptoms of abortion, but before the os uteri had opened itself, we found in the uterus, between the mucous membrane and the fœtal envelopes an abundant colorless exudate, a dirty yellow, somewhat thin, pultaceous material, of a slimy, somewhat lumpy character. This exudate contained in pure culture a short and fine bacillus, whose body presented one, two, or more, rarely three, granules, taking the stain more readily than the body." Experiments made on cows that were pregnant and had aborted, when cultures of the bacillus were introduced into their genitals, and again the fact that the bacillus was found in their discharge and mucous membranes and also in those of numerous cases of abortion, leave no doubt on the question of the bacillus being the cause of the disease.

The condition of the infection is quite an important one. If most people admit that epizoötic abortion is a contagious dis-

ease, in many instances it is no easy task to find out how the cows have been contaminated. For many the port of entrance of the germs has been the sexual organs, the external parts of the genitals of the cow being brought in contact with infected objects, while in the barn. Of course, this is frequent, but copulation must also afford a most favorable opportunity of all infection as being the most direct introduction of the virus into the uterus.

This fact had already been noticed by Penberthy, Sand, and lately by Isaachsen, who has observed it in several instances. A most striking example is mentioned as follows: "A farmer who owned sixteen cows (among which abortion had never occurred) nine years ago, allowed seven of his cows to be served by a bull at a neighboring farm, where abortion had prevailed for some years; all these seven cows aborted and no others. When the cows began to show signs of impending abortion they were immediately removed from the byre and put into another stall. In all the seven cows, the afterbirth was retained and therefore had to be taken off by hand within twenty-four hours. The removal was complete in six of the cows, but not in the seventh, which became emaciated and was sold. After the removal of the afterbirth, the cows were for some time daily washed out with carbolized water and they were not readmitted to their byre, until some considerable time after, when they appeared to be entirely free from discharge. During the following year the six cows again became pregnant and carried their calves to full term. No case of abortion has since occurred in the herd." Evidently in this case the bull had been the carrier of the contagion. Such being the case, it is absolutely necessary to take measures for prohibiting this danger in the struggle against the disease.

But there are other ways of infection. Nocard has already called attention to the possibility that the agent of infection may sometimes be taken in through the respiratory or digestive organs.

From experiments carried out by Prof. Bang there is plenty of evidence that the bacilli of abortion can be introduced through

the blood stream by the way of intravenous injections. And since the infection can take place in that way there was probability that it could be also through the alimentary canal. This was demonstrated by experiments, renewed several times, and the writer concludes: "I am inclined to suppose that the alimentary channel is indeed one of the ways in which the infection is most commonly transmitted. At least it is evidently necessary to have regard to this fact in our struggle against abortion. It is not enough to prohibit infection by the bull, nor to clean and disinfect the hind parts of the pregnant cows and the gutter behind the cows. We must also prevent the soiling of their fodder, which is indeed no easy task to fulfill."

* * *

The subject of the treatment is divided into, first, that to be applied to animals already affected and then the prophylactic measures, which are divided into private and public measures. The first (that is, for animals already diseased) carbolic acid water injections have been recommended, with doubtful results. Perhaps a serum treatment might be more appropriate from the modern point of view. Some good results have been obtained by a Danish veterinarian. Perhaps also an antitoxic serum might do. But for the present prophylactic measures are the ones to resort to. Separation of the sick animal, isolation, thorough disinfection of the animal, of her genitals, external as well as internal, disinfection of the byre. The knowledge acquired of the infection by the digestive tract shows the necessity of cleaning and destroying all parts which may carry discharge from an aborting cow. The part of the bull, as a carrier of contagion, imposes the greatest attention to prevent infection by copulation. Not only must the cow be thoroughly disinfected, but the bull also. Most abundant washing, cleaning and disinfecting of his genitals, especially of the preputial part. Some farmers disinfect the bull not only before but again after the act of copulation. By this measure and free use of iodoform on the penis, abortion was extinguished on a farm.

On the question of prevention, the Professor recommends

that the bull of one farm be not used to serve cows of another, unless there is certainty that the entire stock of cows is and has been free from abortion. The same applies if a strange bull has to be used. New cows brought to a farm must not be allowed to mingle with the others until there is sure proof that they had not been infected previously.

As there is danger of the infection being brought by people coming from infected districts and carrying with their boots or clothes the germs to healthy animals, precautions must be taken to avoid this danger.

The question of public measures has been considered in various countries, but it is very difficult to legislate on abortion, because the disease is so common that it would prove difficult to maintain severe measures against it.

Professor Bang then relates a few of the experiments that he has made on immunization, but while some satisfactory results have been obtained, he concludes in saying: "I am far from pretending that I have solved the question of vaccination against abortion, but I think that my experiments have made it probable that it will be possible in this way to get efficient results, and I hope to be able to continue the experiments, perhaps in a somewhat modified manner. Whether in future vaccination will be the chief weapon against contagious abortion or not, time will show." For the present isolation and disinfection are the essential points to carry out and to recommend to all those who have this scourge amongst their herd.

* * *

THE OBSTRUCTION OF THE ŒSOPHAGUS BY FOREIGN BODIES is an accident relatively frequent and sometimes very serious in the large domestic animals, especially bovines. If one takes into consideration the relative narrow state of the œsophagus, compared with the large dimensions of the mouth, it can be easily understood how large bodies can be swallowed partly but will not pass completely through the entire length of the œsophagus; the greatest frequency of the œsophageal obstruction can be again explained in ruminants by the habit

that these animals have of swallowing, in an imperfect state of mastication, very large alimentary masses. In these conditions, it often happens that the foreign body cannot be swallowed entirely, and that after going down the œsophagus a certain distance, it is stopped in one spot more or less distant from the pharynx to give rise to most severe accidents, which will prove fatal, if they are not relieved at short notice.

The treatment of œsophageal obstruction is essentially surgical :

(1) One may try by external taxis to push the foreign body upwards in the throat and extract by the mouth—*extrapulsion.*

(2) Or, on the contrary, attempts may be made to push it down with appropriate instruments—*intrapulsion.*

(3) Again, the deglutition may be facilitated by crushing or dividing the arrested mass within the œsophagus.

(4) Finally the direct removal can be done by opening the canal—*œsophagotomy.*

* * *

It is that operation in cattle, and, in fact, in all large animals, that Prof. F. Suffran, of Toulouse, wished to consider and rehabilitate in the article which he has written for the *Revue Vétérinaire*, of Toulouse.

"Numerous clinical observations have proved for a long time that wounds of the œsophagus heal rapidly and that œsophagotomy was comparatively a mild operation. And yet this operation is not generally performed, or if it is, it is as a last recourse and when it is too late. Classical authors themselves speak of the operation only as a very last means of relief and as a consequence practitioners only resort to it after having tried several other manipulations, attempts at extrapulsion, or to intrapulsion, or, again, division of the foreign body ; and when all of those have failed, then the operation of œsophagotomy is thought of. But all those manipulations, often dangerous by themselves, or because they have been performed by inexperienced hands, have for results very often injury of the walls of the œsophagus or even perforation entirely of this canal, and

thus become the fatal source of complications, sometimes fatal even if the foreign body has been finally removed.

"If one concludes to operate after all the other processes have been tried and have failed, he must expect many failures, because made under such conditions the operation will frequently be followed by fatal complications.

"These remarks explain sufficiently the fear that most of the veterinarians have of œsophagotomy and they explain also why veterinary papers record only one case in twenty years when it was performed, and even in that case the result was fatal." "With all of that, the operation," says Prof. Suffran, "is not as dangerous as it is believed; it is besides very simple in the generality of cases. As an evidence a case is reported which had been performed under most unfavorable conditions and still was followed by successful results."

* * *

What then must be the conduct of the veterinarian when in the presence of a case of obstruction of the œsophagus in cattle? When the foreign body is liable to become soft, to macerate, so to speak, in the canal and to move downwards by the muscular contraction of the œsophagus, many authors recommend to wait —expectation. Leave the body alone or at the most administer a few tablespoonfuls of oil to facilitate the sliding of the body.

There is no doubt that this may succeed in some cases, but in reality it is imprudent and may in some cases become dangerous. The remaining of a foreign body in the œsophageal canal may be the source of serious sequelæ. Most of the jabots met with have no other origin. Distended and reduced in its thickness by the abnormal substances, the œsophageal mucous membrane becomes easily the prey of infectious agents, inflammation sets in, and one can imagine the fatal effects of the manipulations to displace the foreign body upon an organ whose altered walls are the seat of excessive friability. For the forced administration of oily liquids in the œsophagus, it is one of the most dangerous modes of treatment and ought to be ignored entirely. All deglutition is impossible and the danger of gan-

grenous broncho-pneumonia is most likely to be the result.

Extrapulsion by external taxis, intrapulsion with appropriate instruments, may both prove excellent methods, which will answer in many instances. Still, when the body is voluminous, when its outside surface is rough, these methods become dangerous and remain often useless. Therefore, *one must not hesitate*, if his first attempts have failed, rather than to injure the walls of the organ, which may have already been done by others before he is called. It is better at once to have recourse to the operation. Performed in good conditions, within the first hours of the accident, upon an organ still healthy, the operation is a simple, quick and sure way to remove an obstruction, and it deserves to be used oftener and with less fear by all veterinarians.

* * *

CASTRATION OF OSTRICHES.—*The Agricultural Journal of the Cape of Good Hope* has published an article on the castration of ostriches, an operation which no doubt has a right to claim room in ordinary practical surgery of our day. The author of the communication, Government Veterinarian Elley, first presented some general rules, such as regarding the age, which he thinks is most favorable when the bird is about eighteen months or two years old. He recommends to have the birds kept without food for about twenty hours before the operation. When the bird is caught, a chloroform bag is placed over his head and with rather less than half an ounce of chloroform in it, he is soon brought under its influence. A boy now grasps the right leg, the bird lying on the left side, and brings it slightly further forward than at right angles of the body. The seat of the operation is now exposed. It lies in the angle formed by the leg and the lower edge of the innominate bone, about three inches behind the former and one and a half inches below the latter. The innominate bone can be felt as a distinct ridge running backwards and slightly downwards, about the middle of the body immediately behind the leg; it corresponds to the lowest part of the body on which any feathers are found. It is immediately below this ridge that the incision is

made. Of course, all precautions of cleanliness and antisepsy are to be taken by the operator.

* * *

As must be seen by the above, the manipulations of the operation differ from those resorted to in the castration of other birds. A long incision is made in a parallel line to the ridge mentioned above, cutting down the peritoneum or the thin membrane which covers the bowels. At that moment care must be used in not injuring them. With a pair of forceps it is gently raised, pulled out of the wound and then incised large enough to allow the introduction of the whole hand, which is gently squeezed in the abdominal cavity. The testicles are easily located about three or four inches forward of the incision, almost exactly between the upper extremities of the two legs, situated on and closely attached to the middle of the roof of the abdominal cavity, immediately below the kidneys. They feel as two elongated firm bodies, about one and a half inches long by a quarter of an inch broad. They lie about two inches apart, the left a little rather more forward than the right. Their location must be well ascertained before any attempt to remove them is made, and then by breaking dowu with the fingers the tissue around them, and with a few twists they can be removed as they fall into the palm of the hand. With a little care and attention the two organs can be removed without it being necessary to withdraw the hand. There may, however, be some difficulty presented by the accumulation of fat, which is sometimes met with around the organs. The wound of the skin and of the muscles is closed with three or four stitches and some powder of iodoform dusted on the outside. The chloroform bag is taken off and the bird allowed to wake and get up alone. No stimulation to rise and no fright to the bird must be resorted to. There is no after treatment, except quietness and green diet.

* * *

The following are the advantages claimed for the operation: (1) With the increased condition of the bird which is sure to follow the operation, there will be increased weight of feathers.

(2) Owing to the quieter life of the bird, the feathers will be less damaged by fighting or scraping on the ground than if the bird was entire. (3) In droughts or when the food is scarce, castrated birds will keep in fair condition, where entire birds would starve. (4) It is believed that the flesh of a capon will prove an acceptable article of human food. This may be laughed at, but is worth considering.

* * *

FINAL RESULTS OF THE MELUN EXPERIMENTS.—The epilogue of the experiments of Melun relating to antituberculous vaccination is rather disappointing, as can be seen by the last report of Prof. Vallée before the Société de Médicine Vétérinaire Pratique.

After the final slaughter of the animals experimented upon, a number of them, six, were taken to the Alfort School, to be kept so as to test the duration of the immunity granted by the vaccination. Four of them were to be kept to test the duration of the immunity and the other two were to be exposed to natural infection by being placed in cohabitation with tuberculous animals.

The observations of these six animals began in Alfort in November, 1905. At that time the first four animals were tested with tuberculin, did not react, and therefore were free from disease—they had been successfully vaccinated and had been able to resist infection up to that date.

The other two cows were submitted by two different exposures to contamination by cohabitation with animals having open tuberculous lesions, living and eating altogether. These experiments of exposure took place from June, 1905, to December of the same year, and from December, 1905, to July, 1906.

The results of those observations were all unsatisfactory. Carried out for more than a full year after the second vaccination, the indications given with the tuberculin test were proved correct by the lesions at post-mortem. Indeed four of the animals became tuberculous, more or less extensively.

The conclusion is definitely this: With the bovovaccine a

certain immunity can be granted to cattle, allowing them to resist even natural infection—but this immunity is short and does not last more than a few months. A question then presents itself: Did the method deserve all that has been said and written about it?

There remains two other animals under observation. Will they throw more light on the subject?

* * *

Another important point was brought out in relation to the character of the bovovaccine.

Prof. Vallée said: "At the time that I vaccinated cattle at Melun I used a series of sixteen guinea-pigs to test the bovovaccine and inoculated them in the peritoneum with one-tenth of a milligram to two milligrams. None of them took tuberculosis. Lately a similar experiment was carried out with bovovaccine, received recently from Marburg. The results were altogether different. The intraperitoneal injection was followed by the evolution of tuberculous lesions, invading and fatal in 45 days.

"Had an error been committed? Was the preparation bad? At any rate, it is sure that if this second bovovaccine had been used to vaccinate calves, as it contained virulent bacilli, instead of vaccination it would have been tuberculosis that would have followed its introduction in the system!!

"Conclusions: (1) Bovovaccine has not an equal virulency for guinea-pigs. And we are permitted to suppose that its effects in cattle are not always the same. (2) The resistance to infection with vaccinated animals, three months after the vaccination, is rapidly exhausted and disappears in some subjects after one year. (3) The resistance of vaccinated animals to contagion such as that resulting from contact in stables or barns with animals, carriers of open lesions of tuberculosis, is but slight and does not last more than a few months."

Let us wait for another discovery!!

* * *

A NEW CASTRATING INSTRUMENT.—In the *Nuovo Ercolani*, Dr. F. Cinotti, Professor at the Veterinary College of Pisa, has

published an article on a new forceps for castration, which I am pleased to present to our readers, although the mode of operation for which it is principally made is seldom used with our American colleagues.

"The very great number of instruments invented for the castration of large animals, and especially for limited torsion, shows the desire to correct some of the inconveniences that those in existence present, and amongst which the principal is that of the secondary hæmorrhage, which is so dangerous for country practitioners, who may arrive too late when called to arrest it."

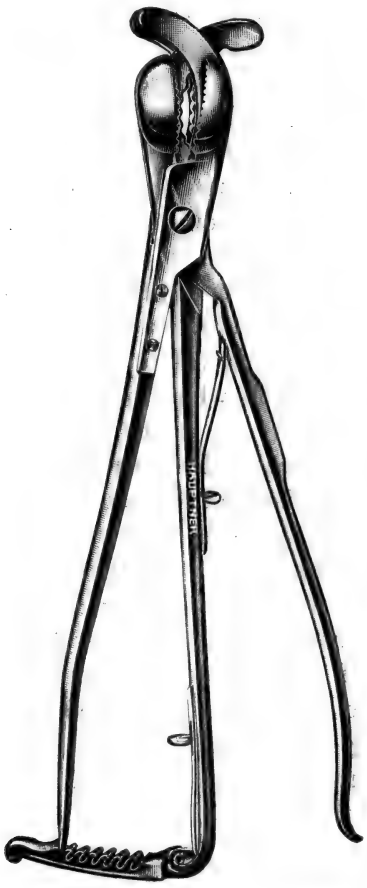
For Dr. Cinotti none of the forceps which exist can prevent hæmorrhage, because they have straight and narrow jaws, in such a way that the cord forms a flat ribbon, badly arranged for torsion, and because the limitating action of the forceps takes place upon a too limited straight surface. The crushing of the tissues taking place upon a comparatively short surface, there are facilities for hæmorrhage to occur. Truly, to avoid these, forceps have been invented with curved jaws or with one or several pads, so as to obtain the crushing upon a longer surface of the cord and again to have it keep its cylindrical form, which is more favorable to torsion. With all that, when the subjects are old the separation of the peripheral end takes place at once and below the forceps and the chances of hæmorrhage are not avoided. This peculiarity of the division of the cord, at the point of contact of the instrument, has been the subject of the attention of Cinotti, and he has made experiments, either with the hand or with various instruments, with hope to find a means to prevent it. He has convinced himself that even in very old animals, in which trophic troubles of the vasculary system exist, one may with impunity resort to castration by limited torsion, as selected method, providing a portion of the twisted cord, sufficient to prevent hæmorrhage from the testicular arteries, is allowed to remain below the point of strangulation of the forceps.

* * *

It was then that he invented the forceps which was made by

the house of H. Hauptner, of Berlin. It is a strong nippers of Sand, which has a third branch, moving a little cutting blade nearer another, which is fixed on the female branch of the instrument. The borders of the two cutting blades are dentated, so as to crush the tissues better.

The technic of the instrument is rather simple, but yet it is essential to follow exactly the directions. The cord being exposed, the operator or his assistant kneeling down behind the croup of the horse, applies the forceps open as is usually done and closes it, without paying attention to the third branch, until the spring reaches the first teeth of the spring of the branch of the middle. The torsion is then begun and kept up slowly; the person who holds the forceps makes it move to a second tooth, then to a third. At that moment the operator takes hold of the third branch and closes it, relaxes it again to close it a little tighter. This is repeated four or five times until a groove is formed on a level with the sharp blades: it is there that the section will be formed. This opening and closing of the third branch is necessary, because the torsion, which takes place in the neighborhood of the blades and almost exclusively below them, has a tendency to spread, while they are open, as far as the space included between, thus complicating the twists of the instrument and the crushing of the tissues.



When the section is about to take place, all the teeth of the toothed rack are closed and also the third branch entirely. Once the section made, the instrument is carefully opened. The same manipulations are carried out for the other side.

With a little practice the operation does not last any longer than by any other process. The author and the director of the surgical clinic of Pisa have resorted to it in many cases with the best results.

* * *

NEW WORK ON OVARIOTOMY AND CRYPTORCHID CASTRATION.—Last month it was my pleasant duty to call the attention of our readers to a work by Prof. F. G. Hobday, F. R. C. V. S.; to-day, I have to say a few words on another from the same author: "The Castration of Cryptorchids and on the Operation of Ovariotomy" of troublesome mares. It is a concise treatise of both operations contained in a little over a hundred pages. Dedicated to the memory of Mr. Charlier, a French veterinarian, who, remarks Prof. Hobday, was the first to introduce to the profession one of the main principles of antiseptic surgery, the book is neatly illustrated by 34 plates and treats well of the many interesting points connected with the two operations.

A very interesting part of this little work is found at the end of each subject. These consist in appendices which for the cryptorchids give the details and photographs of any extraordinary cases, a tabular form of seventy-seven consecutive cases, and a summary of those, in which is shown that four deaths only occurred amongst the whole, also points connected with the position of the testicles, the affected side, fertility, heredity, etc. In the appendix of ovariotomy is shown that with care, anæsthesia and antisepsy, there is but little danger in the operation, that the removal of one ovary will not prevent future conception, and that old animals stand the operation with less good chances than young ones.

The book will certainly be read by all veterinarians and is a good addition to our literature on the subject, although the

subjects have already occupied the attention of other writers.

A. L.

DISPENSATION OF DRUGS BY VETERINARIANS.

In these modern days, when competition is keen and efforts to make trade acute, manufacturers adopt attractive methods to produce enlarged business. This is especially true of the manufacturers of pharmaceutical preparations. These enterprising business establishments employ salesmen of affable manners, well posted upon the requirements of veterinary practitioners of the cities, who make monthly or bimonthly calls at the offices of their regular customers at opportune hours, and devote the intervening time to visits upon other practitioners in quest of new business. They have a line of nicely selected formulæ, encased in neat containers, and do not hesitate to detail the ingredients of the various preparations, which have, as a rule, been suggested by some friendly veterinarian. In the majority of instances, the formulæ are commendable, and usually meet with the approval of the practitioner whose trade is being solicited. Further than this, the agent will agree to place the professional label of the individual veterinarian upon the package, so that the latter will have nothing to do but to write the directions upon it; or, in the case of a standard formula (such as liniments, ointments, or what not) the instructions may be printed. No charge is made for these extras, or at least it is made to appear that there is none, and altogether the proposition is so attractive that orders are not difficult to obtain. Unless a veterinarian has an extensive practice, with plenty of pharmacy assistants, it is quite a task to make up his own preparations, in proper form, enclose them in appropriate receptacles, under neat labels and wrappers, having them at hand just when they are needed. With this newer system they are delivered in large quantities, placed upon the shelves of the veterinarian's pharmacy, more elegantly prepared and more cleanly and neat than if they were home-made.

If this arrangement is honestly carried out, there is little of

adverse criticism to be indulged in. There is no parallel between this system and the prescribing of patent medicines or formulæ whose contents are unknown to the prescriber. The manufacturer assures the veterinarian that a given preparation contains certain exact ingredients; and, if a reputable house, we cannot see why the assurance is not as reliable as our confidence in the integrity of the local druggist in compounding an individual prescription. Should the veterinarian prefer, his own prescription will be as willingly substituted, or any desired formula will be followed and delivered in the same manner as their regular goods, the manufacturers guaranteeing to hold the veterinarian's formula inviolate.

As already stated, we can see no serious objection to this ethical form of trade, and there is no doubt that it relieves busy practitioners from a large amount of time-consuming and uninteresting work at an actual saving of money to him. With honorable business concerns there is no selling outside of the veterinary profession, unless by order of the attending veterinarian; and it is just this feature which is the occasion of these remarks. Some veterinarians who have the medical direction of large business establishments where a great number of horses are employed, and where medicinal preparations are used in considerable quantities, have adopted the plan of writing orders upon such drug houses as we have been considering, instructing them to deliver these same preparations in bulk, to be used as occasion requires under the direction of the stable foreman. One such pharmaceutical firm has submitted this custom to us as to our judgment upon it from an ethical standpoint, and has shown us a number of orders from mercantile houses for large quantities of their standard formulæ, countersigned by the attending veterinarian. It appears to us that this action of the veterinarian is unwise, and serves to make professional formulæ common stable property. They should be reserved for private dispensation in individual practice. There are sufficient well-known and thoroughly tested articles which may fulfill the demands of "ordinary stable treatment."

The same remarks apply to the dispensation of "colic medicines." It is always much better to furnish the stables of one's large clients with neatly prepared "doses," under full and positive label instructions, than to permit them to be in possession of the attending veterinarian's prescription, which is filled at the neighboring drug store as required, or in bulk, while the latter frequently dispenses it to other horse owners, often with the assurance that it is the favorite remedy of Dr. So-and-so, thus robbing the profession of fees which legitimately belong to it. Druggists, as a rule, do not regard the veterinarian's prescription with the same professional sacredness as that of the human physician, and in consequence it behooves us to protect our own interests in such matters.

TO AID THE SPREAD OF RABIES.

About one dozen years ago, a gentleman went to the shelter or pound of the American Society for the Prevention of Cruelty to Animals in Brooklyn, N. Y., to select a little dog for a playmate to his young grandson. The rule of this society at that time was to detain all dogs which had been captured in the streets for forty-eight hours, so that owners might redeem them upon the payment of one dollar as a pound fee and two dollars for a license. Should an owner not materialize within the specified time, the animal became the property of the organization, to be disposed of to the best advantage—that is, if a mongrel animal of unattractive personality and deportment, it would be promptly put to death; on the other hand, if of desirable breed and pleasing manners, likely to attract the favorable consideration of a prospective purchaser, it would be kept for sale to any person visiting the shelter in quest of a dog. The gentleman referred to in the opening of this article secured through this medium a small water spaniel and took it to his home, where his little grandchild was greatly delighted by the novelty of having a playmate all his own, and he loved it and caressed it in childish innocence. The dog's disposition, of course, was unknown to the inmates of this home, so that the valuable pre-

monitory symptom of changed demeanor could not be recognized to warn them of impending danger from rabies. On the second day after its introduction into its new home this dog bit the child upon the cheek. A little later it appeared to have a sore throat, or a bone, it was thought, had become lodged in the pharynx; but a friend of the family, "who knows all about dogs," pronounced it a case of distemper. And so the animal was sent away to a kennel that he might be cared for while passing through the stages of "distemper." But the very next day the kennelman sent word that the dog was weaker, and was seriously amiss. The writer was then asked to visit the kennel and determine the true nature of the ailment, which was easily diagnosed upon a glance to be dumb rabies. Word was at once sent to the owner of the dog, and the child was taken to the Pasteur Institute in New York, where he underwent the inoculation treatment, and we are pleased to state escaped the dread disease. In the meantime, the dog died, and his head was forwarded to the institute, and, although the Negri bodies were not known in those days, inoculation experiments upon guinea-pigs confirmed the diagnosis.

These facts were published in the REVIEW at the time, and a vigorous protest was entered against the almost criminal practice of selling stray dogs, gathered from all quarters of the city, kept in close confinement in a large pen for days in a promiscuous commingling of the dregs of dogdom, where, howling, growling, snapping, biting, and cohabiting, a single rabid animal would possibly infect the entire number. And then to sell these animals, in the incubative stage of rabies, to individuals who as a rule sought them for children's pets, was surely the greatest outrage which this society could perpetrate—and this is saying a great deal when it is remembered that this organization has promulgated the information to the public that there is no such disease as rabies.

For the years intervening from that date to the present time, it has been understood that no dogs could be purchased at these shelters; that all animals not reclaimed within forty-eight

hours by their actual owners were destroyed. Whether these rules were strictly enforced or not, is open to conjecture.

A change in the officers of the society has apparently brought about a change of policy, for we find the following announcement in the New York *American* of December 15:

"The Society for the Prevention of Cruelty to Animals announces that any one who wants a dog can have it on application to the society by simply paying the $2 license fee. It was decided at a meeting of the society that this method was preferable to putting the little stray dogs to death."

Whatever benefit this society confers upon the public by removing stray dogs from the streets of Gotham is stultified and overbalanced a hundred times by a system of greed which tends to spread a disease which is the very danger sought to be avoided through the prevention of the congregation of homeless street dogs. With the most extensive outbreaks of rabies now existing in Connecticut, New Jersey, and other states as a warning, what on earth does this society mean by such an exhibition of criminal ignorance?

COMPARATIVE MEDICINE AT HARVARD.

In his presidential address before the American Veterinary Medical Association at New Haven last August, Dr. William Herbert Lowe pointed out the importance to the student of human medicine of entering the domain of veterinary or comparative medicine and predicted that the time was near at hand when veterinary medicine would become a part of the curriculum of schools of human medicine.

We are now pleased to note that President Eliot, in a recent address at the Harvard Medical School, took a broad view in discussing the advances which are being made in that institution in the study of medicine, which is not without interest to veterinarians:

"Medical study has been in time past far too exclusively the study of man's body by itself. Hereafter the study of medicine must be largely comparative, or in other words must include man's relation to the animal and vegetable kingdoms. The

Harvard Medical School enters into possession of its new buildings with three professorships of comparative medicine already established, the professorships of comparative anatomy, comparative physiology and comparative pathology. This tendency to comparative study has been already well developed in other subjects, as for example in comparative psychology, legislation and religion. Wherever this study by comparison wins adequate place, it makes the study of the subject broader and more liberalizing, and the results obtained more comprehensive and juster.

"Medical students should therefore have studied zoölogy and botany before beginning the study of medicine, and should have acquired some skill in the use of the scalpel and microscope. It is absurd that anybody should begin with the human body the practice of dissection or of surgery; and, furthermore, it is wholly irrational that any young man who means to be a physician should not have mastered the elements of biology, chemistry and physics years before he enters a medical school. The mental constitution of the physician is essentially that of the naturalist; and the tastes and capacities of the naturalist reveal themselves, and, indeed, demand satisfaction, long before 21 years of age, which is a good age for entering a medical school."

Veterinarians, in their professional education, have long studied along the lines of the broader scope which is here so well outlined by President Eliot. Veterinarians have long been aware of the necessity for what he calls comparative study on the part of persons preparing for the medical profession. It is a hopeful sign of the times, and veterinarians will unite in applauding President Eliot's efforts to elevate the standard of medical education.

THE first veterinary school was estalished 145 years ago, at Lyons, France.

A CIVIL SERVICE EXAMINATION to secure eligibles for filling a large number of vacancies in the position of veterinary inspector, at $1,200 per annum, in the Bureau of Animal Industry, was held Dec. 12 at various points throughout the country. Only 21 eligibles were secured by the examination of Oct. 17, and there are at least 50 vacancies to be filled. Applicants should apply to the Civil Service Commission, Washington, D. C., asking for Form 1312.

ORIGINAL ARTICLES.

DIFFERENTIATING THE INTESTINAL DISORDERS OF THE SOLIPED.

By Richard P. Lyman, B. S., M. D. V. (Harv.), Hartford, Conn.

Read before the December meeting of the Veterinary Medical Association of New York County.

When your genial President invited me to appear here to address you upon some topic that would more especially interest veterinarians engaged in city practice I must confess to momentarily withering and upon the impulse starting a line of refusal with a plea of too much other work, my time being indeed occupied extensively, aside from my exacting professional obligations, by sundry duties associated with the office of Secretary of the American Veterinary Medical Association. Upon more mature consideration I felt that the graceful favor should not be cast off without some attempt to entertain you, and unguardedly consented to speak upon "Differentiating the Intestinal Disorders of the Soliped."

I appreciate the thought that must have first flashed to the minds of readers of this evening's program. That this subject is as old as is our calling and has been thrashed over time and time again; of course, to this we must agree, but feel that even to-day conditions exist, associated with this perverted metabolism, that warrant even further the discussion that it is hoped this résumé may bring forth.

A careful observer and a compilation of statistics of the mortality from causes under consideration cannot but impress us with a feeling of insecurity and dread when called upon to exert professional skill on an animal thrashing and rolling in the agonies of "so-called" colic.

Historical résumés, participation in consultations, adverse opinions and subsequent post-mortem examinations have strongly impressed me with the general insufficiency of diagnosis of

abdominal disorders, leading me to the conviction that the high percentage of mortality is in great measure consequent upon a lack of proper knowledge of the condition until it is too late to save a patient that might have otherwise been relieved. The old idea that colics were either spasmodic or flatulent has well been exploded by Reeks and others and these terms are to-day catalogued among the symptoms, leaving the diagnosis to a more detailed examination of the patient.

Surely this is a step of progress and the fact that some practitioners fail to realize this accounts in great part for their high mortality.

True it is that much depends upon early treatment and rapid diagnosis, but in my opinion hastily administered anodynes, which oftentimes we find the patient unable or unwilling to swallow, are more injurious, by prolonging delay or lessening the pain and masking the symptoms while the conditions within are fast reaching a point beyond relief, than to allow the animal to give further expression of discomfort during the time required to determine from what form of intestinal disturbance it is suffering. Indeed, a certain amount of haste is imperative consequent upon many conditions; more especially important being the changes that occur within the visceral region of our subject and the sudden development of fatal complications unless speedily relieved; second, from a financial standpoint of the practitioner in attendance, a busy practice cannot long and economically remain at a standstill while waiting for an abatement of the ailment; the commercial value, as a general thing, will not warrant this service to the patient; again, and by no means the least consideration, is the question of diplomatically handling the owner, at this moment wrought to that stage of restlessness when to him moments seem to constitute hours.

I have previously stated that the symptoms of the true ailment may be temporarily masked. Consequently it is safe to claim that a false diagnosis can undoubtedly be and moreover is frequently encountered by a condition produced in the patient consequent to earlier administration of medicants given by the

owner or person in charge. Their action has a tendency to cover the signs that would more especially be expressed; the animal, on the other hand, continues to exhibit a certain degree of pain, but characterized by symptoms foreign to the primary manifestations of the nature of the malady existant.

This may well be illustrated by an example of impaction. The animal at first expresses but a slight colitis, restlessness, desire to continually lie down and as quickly rise to the feet, looking at the flanks, small amount of fæcal material voided, at first perhaps frequently, ineffectually attempting to urinate, straining, and indeed the more common symptoms of pain of an abdominal character. At this stage the owner or unwary veterinarian administers an anodyne, possibly in combination, to treat the principal expressions manifest (thought to be generally stoppage of the water); the pains cease for the time being, but the excitant cause is by no means controlled and continues to increase in intensity.

It is in just such a case that the opportunity presents itself for the practitioner to prove his value to the owner or, on the contrary, enter one of the many pitfalls by looking superficially or lightly at the diseased animal and, relying upon the owner's diagnosis, influenced many times by an apparent desire to save expense, complies with the latter's request and he (the doctor) leave a dose or two of some anodyne preparation, should further trouble develop, which will, in this particular instance, be liable to occur. Time goes on, the patient grows weaker, has less power of resistance, and pain again becomes visible. The medicine is now used to exhaustion, but to no avail; the doctor is again summoned to relieve the suffering horse, only to find a most dangerous subject and a condition calling for the most exacting and prompt diagnosis. Much time has been lost and more must necessarily slip away before medication can bring entire relief, if indeed at all.

It is not my purpose to delve into the realms of physiology and anatomy, but it appears pertinent to briefly picture the anatomical relation of the parts that I propose to take under con-

sideration and give a description from the viewpoint of a general practitioner.

Beginning, the stomach lies diagonally across on the median line immediately posterior to the diaphragm and liver and above the spleen, with the cardiac (anterior) end somewhat anterior, where the junction of the œsophagus, after passing through an opening in the diaphragm, takes place. The cardiac opening, formed by the peculiar structure of the inner lining of the œsophagus, before it spreads out over the anterior inner surface of the stomach, is so peculiarly constructed as to permit the entrance of food in a downward direction only. This inability of opening backwards is a consequent cause of a high mortality in certain classes of colic and if not appreciated may lead to fatal terminations as a result of incorrect medication.

Tracing posteriorly through the pyloric exit of the stomach, the duodenum is entered by a trap-like curvature in a course upwards from the stomach, returning immediately upon itself assuming a downward direction, which it almost at once reverses to once more course upwards as it passes towards the right side, encircling the antero-inferior portion of the cæcum on its course upwards and obliquely backwards to the region immediately anterior but considerably below the left hip, where, suspended by the mesentery from the lumbar region, it assumes the name of jejunum and terminates by the portion styled the ilium at the ilio-cæcal valve. This mesentery or folding of the peritoneum, though in the normal condition it is thin, it is none the less possessed of considerable strength. Under abnormal conditions of the gastric and enteric disturbances it seems to lose its tenacity and become very liable to rupture during the violent struggles of the patient.

The ilio-cæcal valve, deriving its name from the points of union of the ilium with the cæcum, which latter lies in front of the right hip, extending downward and forward. This vermiform appendix-like sack, holding possibly from five to eight gallons, is subject to impactions and large accumulations of gas. Tracing onward through an opening from the cæcum rel-

atively small and located adjacent and anterior to the previously mentioned ilio-cæcal valve, we enter the large colon, an elongated U, shaped organ folded at its middle back upon itself behind the diaphragm immediately under the stomach, the free end of the fold lying immediately anterior to the right hip and above the cæcum in the sub-lumbar region.

Leaving the large colon, which has carried us onward for some sixteen feet from the cæcum, we reach the small or floating colon, the frequent seat of impaction, a most difficult condition to diagnose and one that calls for prompt action; here again we may encounter the twist discovered only by manipulation, which demonstrates the importance of rectal examination in all equine colics prior to delivering a positive diagnosis.

Although I have purposed to discuss intestinal disorders, it seems proper that we stretch our imagination sufficient to include the stomach as a portion of the anatomy under consideration, knowing that it often engages itself, either independently or conjointly, with the bowels to complicate the symptoms expressed.

Without making any special claim for original work, I purpose to present to you what may be characterized as my keynotes of differentiation in diagnosis, found more especially valuable from an experience derived in actual hospital and field practice. To more especially enunciate this point, let me detail to you the classical description of the common but not individually diagnostic symptoms as they occur in colic; later compare the various forms of colic, so-called, one with another as expressed by certain special features, in this way arriving at a differentiation.

Directing our attention to a superficial examination and an historical sketch we note that the skin exhibits a condition varying in degree from the usual normal appearance to either a hot, dripping sweat or a cold, clammy feel; it may be loose or tense and drum-like; expression ranging from a dumb, dull look to one of intense anxiety; nostrils more or less distended, respirations accelerated and at times quite audible. The head may

be thrown suddenly upwards, hang considerably below the median line or the lower jaw may be rested upon a convenient object; upper lip oftentimes elevated, showing the teeth. There are varying degrees of restlessness, from constant desire to move about, pawing, looking at one or both flanks, switching of tail, waiving or shaking of head, uneasily up and down, muscular tremors in one group or the entire integument, rolling and assumption of peculiar positions, attempts at urination, violent straining with emission of urine, frequent dropping of fæcal matter or constipation, backing against objects, at times even delirium. Expulsion of gas per rectum either in blasts or snaps, sometimes eructations; pulse varying with the duration of the malady from normal through all the stages of increase and decline, fullness to imperceptibility; mucous membranes of the eyes from a yellowish tinge to milk white, pink or livid; buccal membrane either normal, yellowish, white or spotted. These symptoms expressed to varying degrees in the varieties of colics will be eliminated or augmented as the practitioner gathers notes upon the history of the patient's ailment.

We can imagine how impossible it would be to intelligently combat colic if the practitioner expected to encounter in every instance all the expressions detailed. Under such circumstances there would be no necessity for diagnosis, simply retaining the old custom of quieting the pain and overcoming the symptoms without the thought that a certain expression may be premonitory of some peculiar pathological change. The scientific trend of the day has brought us to a realization that all colics are not identical; some are simple, some complicated and some expressions of colicky pains are not colic at all, as pleurisy and azoturia for example. Here lies the importance of differentiation, and failure to appreciate this will undoubtedly be associated with a high mortality and much unnecessary loss of time and annoyance on the part of the veterinarian.

DIFFERENTIATION.

Gaseous Distension of the Stomach.—Cognizant of the ordinary expressions of pain as already detailed and assuming that

certain of these are manifest and indeed recognized, we must now carefully apply ourselves to the special symptoms and history.

The animal is bathed in profuse sweat, head elevated, neck outstretched, nostrils distended, pains exceedingly excruciating, eructations of gas, salivation, slight bloating. The intestinal sounds, though diminished, are apparent to nearly the end, fæcal discharges about normal.

These symptoms, if associated with a rapidly eaten meal, more especially if upon a tired or empty stomach, supply grounds for establishing our diagnosis, particularly if accompanied with our keynotes of differentiation, namely—inclination to crowd forward when attempts are made to raise the patient's head, sobbing, catchy expiration, gulping foul smelling ejected gas, associated at first with particles of ingesta, which have accumulated in the lower portion of the œsophagus from inability to enter the distended stomach; later a prune-juice discharge, inability to relieve the bloating to any great extent upon tapping.

Rupture of the Stomach.—The foregoing affliction may course on to end in a rupture of one or more of the walls of the stomach, first noticed by a change of pulse from the full and bounding character to one small and extremely quick, at times almost imperceptible, sweat continues profuse, quivering of the muscles, unnaturally cool feel of the skin, dog-sitting posture during extended intervals. The animal expressing every indication of a grave condition, with drooping ears, countenance drawn and sobbing respiration, fails rapidly to a fatal termination, the actual condition only to be absolutely determined upon post-mortem examination.

Gaseous Distension of the Folded Colon.—This organ is so located that when distended it exerts pressure, as does the stomach, upon the diaphragm and adjacent organs, with a portrayal of symptoms so allied and indeed identical, at a cursory glance, to gaseous distension of the stomach, and the practitioner may be so easily led astray, that I feel warranted in digressing from

the anatomical order to consider it at this time. Without dwelling upon the causes of this accumulation of gas, it will suffice to indicate the keynotes of differentiation, to wit:

Gulping, without the foul odor, respirations labored, but not sobbing, and the escape of quantities of gas when tapped. It is by no means of rare occurrence that an animal has been subjected to empirical treatment and the ingenuity of the neighborhood exhausted when a veterinary surgeon is called, only to find the animal showing symptoms expressive of either of these conditions; a differential diagnosis, however, does exist, and it is the practitioner that is competent to make selection that will enhance his value to a client. Failure to do so, and that with a certain degree of rapidity, will result in a fatal termination when life might possibly have been spared.

Distension of the Stomach with Food.—The general symptoms are here noted, but of an exceptionally torpid character. There is body fullness, with dull steady pains, and every appearance of reflex pressure upon the brain.

Apparently at first there seems to be much similarity between this expression of colic and that consequent upon distension of the folded colon by accumulated food; on the other hand, a comparative examination of the symptoms leaves no doubt about the determination of their diagnostic characteristics.

Distension of the Folded Colon with Food.—In attempting to differentiate this malady we primarily note that the pains are periodically expressive, though not excruciating, while in the stomach distension they are constant and dull. The flank is full and bloated, bowels at times moving to diarrhœa. A careful rectal examination demonstrates that the pelvic flexure is found, as a rule, above and to the left of the rectum, whereas in the former colic the colon lies in its normal position anterior and above the rectum. The history of one, stomach distension, is gluttony, while this condition is associated with enforced idleness conjoined with an abundant fibrous diet.

Spasmodic Colic.—Returning to our anatomical order, we arrive at the small intestines. I propose to more especially con-

sider a condition caused by augmented peristaltic action. The various forms of exhibited pain in these parts are, in my opinion, consequent to one primary condition whereby the sensory nerves and muscular coat of the viscus are stimulated to almost a tetanic degree best styled spasmodic colic.

The pain is reflex and of a diagnostically intermittent character; the animal that appears to be in perfect health, eating and standing naturally, suddenly shows uneasiness,has sharp cramps, the abdomen is tense, contracted and lacks its normal fullness, having a tucked-up, pleuritic look; these exhibitions of pain are short in duration and followed by intervals of ease. Upon careful auscultation the peristaltic murmurs are found greatly accelerated and sharp metallic splashing sounds may be heard similar to large volumes of oxygen suddenly liberated through water.

Spasmodic colic will not, as a rule, cause the unwary veterinarian great concern and may moreover oftentimes be speedily corrected; it is, on the other hand, at times, a premonitory condition that unless relieved will lead to such serious complications as mesenteric rupture, volvulus, twist or invagination.

Mesenteric Rupture, *Invagination*, *Twist*, *Volvulus.*—It is not my purpose nor do I believe it possible to differentiate these several maladies that are found in the small intestines. They are, on the other hand, associated with the differentiating diagnostic symptoms of trouble in the region under consideration. The symptoms, as in spasmodic colic, are intermittent sharp pains, associated with extremely anxious look and violent action—the animal throwing itself regardless of danger.

If during these wild paroxysms the animal inclines to move backward with a straddling gait it is fair to presume that one or more of these conditions exist. We have five times upon post-mortem examination where the patient has expressed this peculiar backing tendency, found a multiple twist of the jejunum, and once a mesenteric rupture through which the twisted portion had passed, and this immediately in the wake of spasmodic colic.

Obstruction of the Small Intestines.—Besides the several fatal terminations of spasmodic colics of this region we presum-

ably encounter impactions that are associated with pains of an intermittent, slow grinding character; these are generally extended over a considerable period and oftentimes associated with unusual looseness of the bowels, as if nature were attempting to flush the system. The pains sooner or later are associated with loss of appetite, greater intensity of the symptoms of uneasiness, and the ordinary, previously detailed, symptoms of colic, without tympany become manifest, associated with, I might almost say, the diagnostic inclination to move backward as if attempting to escape from the augmenting pressure. The pains expressed are not furious as in the preceding conditions, and, unlike them, they are curable when speedily diagnosed, promptly and efficiently treated; otherwise the termination of enteritis may ensue, with grave, if not fatal, complications.

This obstruction has symptoms so intimately allied to a like condition in the small or floating colon that its keynote of differentiation is by the process of eliminating the possibility of obstruction in the latter, the folded colon, by a painstaking and intelligent rectal examination.

Disturbances of the Cæcum.—The next portion of the intestinal tract that should engage our attention is the cæcum, where, as previously suggested, it seems reasonable to think that impactions and gaseous accumulations may induce pain of a more or less colicky nature. As a matter of fact, it has always seemed to me that positive diagnosis of trouble in this part is impossible of differentiation from disturbances in the upper portion of the folded colon. We have never been fortunate enough to encounter impaction of the cæcum upon post-mortem examination.

Flatulent Colic.—Characterized by sudden accumulation of voluminous quantities of gas in the viscus immediately beneath the right flank and accompanied by rotundency of the abdominal cavity, absence of peristalsis, membranes often cyanotic, pulse hard and rapid, animal in great distress, respirations labored and an exhibition of many of the common symptoms of colic that lead to either suffocation or rupture unless speedily

relieved. The differentiation can readily be established by tapping or by rectal manipulation.

Obstruction of the Floating Colon.—While discussing obstruction of the small intestine, I stated that a differentiation from this condition was possible only by a most thorough rectal examination. This variety of intestinal disturbance is one of the most dangerous and easily overlooked of all the prolonged colics. It presents more or less continuous pressure pains varying in intensity, and accompanied by severe and violent straining. The animal has either a watery purge or a constant expulsion of small amounts of fæcal material.

During the rectal examination, upon which one must hope to base a differential diagnosis, the animal gives expression of excessive pain and characteristic desire to depress the abdomen, raising upon the toes of the hind feet when the bowels are manipulated. The rectum feels somewhat occluded and the impaction may be located upon the left when the obstruction is posteriorly. The expulsion of gas is associated with a snapping like sound.

* * *

Although the above enumeration includes the more common expressions of colic in the soliped that are especially possible of diagnosis, it does not by any means exhaust the entire category of ailments. Other conditions, for example enteritis, pleurisy, hernia, bladder pains, azoturia, influenza, diarrhœa, rectal impaction from loss of nerve force, heat stroke and worm colics, will present symptoms which although allied to true colics should not necessarily be misleading to the careful diagnostician, unless we may except verminous colics, which will more particularly need differentiation from spasmodic colic by historical evidence.

With a knowledge of these possibilities for mistake, I am so impressed with the needs of rapidity in arriving at the correct condition, that I feel warranted in again impressing upon you the importance of thoroughness and detail before establishing a diagnosis, publicly at least.

STUDIES IN LOCAL ANÆSTHESIA.

By William S. Eggleston and John F. Miller. Under the Direction of Prof. W. L. Williams.

Submitted as a Thesis to the Faculty of the New York State Veterinary College, for the Degree of Doctor of Veterinary Medicine, 1906.

The question of local anæsthesia is becoming more important each year in the modern surgery of our domestic animals. We are compelled to use anæsthetics for the sake of humanity, for the convenience and safety of the operator and safety of the animal.

Because of many fatal results occurring after general anæsthesia (chloroform), especially in smaller animals, it is our aim to show the practical use of local anæsthesia when administered for surgical operations.

Local anæsthesia is the destruction of sensation, especially of feeling, in some one part of the body.

In our study, we have confined ourselves to cocaine, eucaine and stovaine.

COCAINE HYDROCHLORATE.

Cocaine hydrochlorate is the only official salt of cocaine. It is colorless, transparent, crystalline substance, of a saline, slightly bitter taste, and produces upon the tongue a tingling sensation, followed by numbness of some minutes' duration. It is permanent in air, soluble in water and alcohol. Locally and externally it is ischæmic, analgesic and anæsthetic. It has no action upon the unbroken skin, but produces complete anæsthesia when applied to the mucous membrane and subcutaneous tissue. It is absorbed with difficulty from the conjunctiva, causing contraction of the pupil and impaired accommodation. The anæsthetic action is due to the depression of the sensory nerve endings. It is a strong poison, causing paralysis. It cannot be sterilized by boiling.

BETA-EUCAINE HYDROCHLORATE (THE HYDROCHLORATE OF BENZOYLVINYLDIACETONALKAMIN).

Beta eucaine is a white, neutral, crystalline substance, soluble in water at room temperature to the extent of about 4 per

cent. Stronger solutions can be prepared by the aid of heat, but a greater concentration than 1 per cent. to 4 per cent. is not usually required. It is non-irritating, anæsthetic and can be sterilized by boiling. It possesses a slight bactericidal action and does not cause mydriasis, corneal lesions or disturbances of accommodation.

STOVAINE, CHLOROHYDRATE OF AMYLENE, OR HYDROCHLORIDE OF A DIMETHYLAMINE BENZOYLPENTANOL.

Stovaine is derived from the amino-tertiary alcohols and is a white, slightly acid, small brilliant crystal, extremely soluble in water, methyl alcohol and acetic ether. It is very stable and may be sterilized by boiling. It is a vaso-motor and a non-irritating anæsthetic.

In our experimental study dealing with the toxicity of cocaine, eucaine, and stovaine, horses have been chiefly used. We injected each drug into the jugular vein, observing antiseptic precautions.

Experimental Animals.—No. I, grey gelding, weight 870 pounds; No. II, brown mare, 890 pounds; No. III, brown mare, 915 pounds; No. IV, chestnut gelding, 810 pounds; No. V, bay gelding, 780 pounds; No. VI, bay gelding, 1100 pounds; No. VII, grey mare, 850 pounds; No. VIII, grey mare, 920 pounds.

Intravenous Injection of Cocaine.

"*Experiment 1.*—Animal No. I was injected with .2 grams (3 grains). No reaction.

2.—Animal No. II was injected with .287 grams (4 grains). No reaction.

3.—Animal No. III was injected with .334 grams (5 grains). No reaction.

4.—Animal No. I was injected with .4 grams (6 grains). No reaction.

5.—Animal No. II was injected with .467 grams (7 grains). Animal showed signs of stimulation in one minute, which increased to nervous irritability, manifested by a twitching of the muscles Pulse and respiration slightly accelerated.

6.—Animal No. I was injected with .534 grams (8 grains). In one minute the animal showed stimulation, increase of pulse and respiration. In five minutes the animal appeared restless, head raised, and ears working quickly backward and forward.

Muscles twitching, treading, etc. Violent forward movements occurred. There was rolling of eyeballs, dilated pupils, frequent defecation in small amounts. These symptoms gradually abated, and animal seemed normal in thirty-five minutes.

7.—Animal No. IV was injected with .534 grams (8 grains), the same amount being used as in experiment 6. In one minute, stimulation was noted, with accelerated pulse and respiration. In six minutes, there was marked restlessness, trembling, head raised, prancing, forward movements, rolling eyeballs, dilated nostrils, salivation, frequent defecation. Animal again appeared normal in thirty minutes.

8.—Animal No. II was injected with the same amount as in experiments 6 and 7. In two minutes great stimulation occurred, insane-like movements, great reflex irritability, violent weaving and forward movements alternating. There was treading with all feet, anxious expression on the face, dilated nostrils, snorting, severe muscular trembling, salivation, rolling of eyeballs, dilated pupils, small amounts of fæces passed frequently. The pulse increased to 70 and respiration to 50 per minute. No change in temperature. In one-half hour, these symptoms began to gradually subside. In fifty minutes, animal again appeared normal, ate hay, etc.

Intravenous Injections of Eucaine.

9.—Animal No. II was injected with .2 grams (3 grains). No reaction.

10.—Animal No. III was injected with .267 grams (4 grains). No reaction.

11.—Animal No. IV was injected with .334 grams (5 grains). No reaction.

12.—Animal No. V. was injected with .467 grams (7 grains). No reaction.

13.—Animal No. II was injected with .6 grams (9 grains). No reaction.

14.—Animal No. IV was injected with .767 grams (11 grains). No reaction.

15.—Animal No. VII was injected with .867 grams (13 grains). No reaction.

16.—Animal No. III was injected with 1 gram (15 grains). No reaction.

17.—Animal No. VII was injected with 1.13 grams (17 grains). Animal showed signs of stimulation, nervousness, irritability, that passed off quickly.

18.—Animal No. II was injected with 1.26 grams (19 grains). Symptoms same as in experiment No. 17.

19.—Animal No. III was injected with 1.4 grams (21 grains). There soon appeared nervousness, stimulation, slight twitching of muscles, and dilated pupils. Animal again appeared normal in fifteen minutes.

20.—Animal No. IV was injected with 1.54 grams (23 grains). In five minutes there was nervous excitability, timidity, stimulation, weaving and forward movements, muscular trembling, anxious expression of face, nostrils dilated, snorting, salivation, rolling of eyes, dilated pupils, and defecation. Symptoms abated gradually and animal appeared normal in fifty minutes.

Intravenous Injection of Stovaine.

21.—Animal No. III was injected with .2 grams (3 grains). No reaction.

22.—Animal No. IV was injected with .534 grams (8 grains). No reaction.

23.—Animal No. V was injected with .867 grams (13 grains). No reaction.

24.—Animal No. I was injected with 1.2 grams (18 grains). No reaction.

25.—Animal No. II was injected with 1.54 grams (23 grains). No reaction.

26.—Animal No. IV was injected with 1.37 grams (28 grains). Showed slight stimulation.

27.—Animal No. IV was injected with 2 grams (30 grains). In five minutes there occurred nervous irritability, rigidity of all muscles, especially those of the head and neck. The neck was thrown upward and backward (opisthotonos). There were also backward movements of the body, marked timidity, anxiety and frequent defecation, rolling of the eyeballs, dilated pupils, increased pulse and respiration. These symptoms lasted ten minutes, and then gradually disappeared.

28.—Animal No. VII was injected with 2.06 grams (31 grains). In four minutes the animal threw the head up violently and came forcifully backward, and fell on its side. Respirations increased from 18 to 70 per minute. Pulse from 35 to 108, convulsions occurred, later tonic spasms, frequent defecation. Other symptoms same as shown in experiment No. 27.

29.—Animal No. III was injected with 2.14 grams (32 grains). In four minutes animal showed great timidity, ner-

vous irritability, threw the head violently upward, came forcibly backward, falling on its side, great rigidity of all muscles, rolling of the eyeballs, dilation of pupils and nostrils, stertorous, deep and increased respirations, pulse could not be taken, mouth open, head drawn down toward sternum, later upward (opisthotonos), frequent defecation in small amounts, tonic spasms of extensors, animal rigid. In fifteen minutes violent symptoms began to abate, showing clonic spasms and trembling, sweating, salivation; animal made unsuccessful efforts to regain its feet. The symptoms continued to subside, and animal was able to stand in thirty-five minutes. Pulse and respirations became normal in one hour. Ate hay. Later showed no ill effects of drug.

30.—Animal No. V was injected with 2.34 grams (35 grains). In one minute animal threw head upward, came violently backward, falling on one side, muscles rigid, rolling eyeballs, dilated pupils and nostrils, mouth open, very difficult breathing, pulse could not be taken, head drawn downward toward sternum, gasping, tonic spasms of muscles. In twelve minutes clonic spasms, respiration less labored, and violent symptoms gradually lessened. Salivation, sweating, trembling. The animal made several attempts to regain its feet. There was lack of muscular control, and animal appeared very weak; frequent defecation. The symptoms were very similar to those in experiment 29, only more violent. Animal regained its feet in one hour and twenty minutes. Ate hay.

In these injections 10 c.c. of sterilized water was used in each case up to and including 1 gram (15 grains). Above 1 gram (15 grains) 15 c.c. of sterilized water was used. The solution was injected at body temperature.

We find that very similar toxic effects are obtained from the intravenous injection or cocaine, .534 grams (8 grains), eucaine, 1.54 grams (23 grains), or stovaine 2 grams (30 grains), except that the animal suffering from cocaine and eucaine tend to move forward and those with stovaine backward.

INTRAPERITONEAL INJECTIONS OF STOVAINE.

31.—A cocker spaniel weighing 13.13 kilograms was injected with 1 gram (15 grains). No reaction.

32.—Same animal three days later was injected with 1.54 grams (23 grains). In two minutes salivation occurred, snap-

ping of jaws, vomition, bulging of eyeballs, dilated pupils. In seven minutes tonic spasms, animal fell, head drawn backward (opisthotonos). These symptoms lasted ten minutes and then clonic spasms occurred, salivation, respiration greatly increased in force and frequency, restlessness, swimming movements, unsuccessful attempts to stand, striking head violently against the floor. These symptoms continued for twenty minutes. Animal lay quietly on its side. Respirations increased, tongue hanging from mouth. The symptoms gradually lessened and animal appeared normal in one hour.

33.—Seven days later the same animal was injected with 1.67 grams (25 grains). Slight nervous irritability appeared in seven minutes, salivation, snapping, timidity. Animal appeared normal in fifteen minutes.

34.—Four days later, same animal was injected with 1.8 grams (27 grains). In five minutes there was nervousness, bulging of eyeballs, timidity, salivation, snapping. Animal appeared normal in twenty minutes.

35.—Six days later same animal was injected with 2.07 grams (31 grains). In one minute after injection salivation. In two minutes, vomition, great salivation, snapping of jaws, bulging of eyeballs, dilated pupils, looking from side to side, showing nervousness. In three minutes there was unsteady gait and lack of muscular control. In four minutes head was thrown backward (opisthotonos), and animal fell in a tonic spasm lasting one minute, clonic spasms then appeared, subsiding one minute later. These were followed by pitching forward and swimming movements. Respiration labored and increased in frequency. In ten minutes animal began rolling, first to right and then to the left. These rolling movements continued for twenty-five minutes. The animal was then seized with fifteen intermittent clonic spasms, and died forty minutes after injection in a clonic spasm. Each spasm lasted about thirty seconds, and about thirty elapsed between each. During these spasms respirations were absent.

EXPERIMENTS TO DETERMINE THE EFFECTS ON MOTOR NERVES.

Drugs were injected over the facial nerve, beneath the temporo-maxillary articulation.

Cocaine.

36.—Animal No. VII injected unilaterally, .2 grams (3 grains). No reaction.

37.—Same animal one day later injected .34 grams (5 grains) unilaterally. This produced marked paralysis of the upper and lower lip in five minutes. The paralysis disappeared in five hours.

Eucaine.

38.—Animal No. III was injected with .34 grams (5 grains) unilaterally. In six minutes there was paralysis of upper and lower lips. The paralysis disappeared in one hour.

39.—Animal No. III was injected with .67 grams (10 grains) unilaterally. In four minutes there was marked paralysis of upper and lower lips and the effect disappeared in two hours.

Stovaine.

40.—Animal No. IV was injected with .34 grams (5 grains). Paralysis of upper and lower lips was shown in seven minutes. The effect disappeared in twenty-four hours.

41.—Animal No. V was injected with 1.67 grams (25 grains) unilaterally. Paralysis was shown in two minutes in upper and lower lips. The animal was destroyed three days later. There was still marked paralysis.

Normal Salt Solution.

42.—Animal No. VII, 10 c.c. was injected unilaterally. No reaction.

Since the facial is a motor nerve at point of injection, cocaine, eucaine and stovaine are motor paralyzers, of which stovaine seems most dangerous. Therefore care should be taken with their use in proximity to motor nerves.

INFLUENCE OF LIGATION UPON ANÆSTHESIA.

43.—Animal No. IV. Three legs were ligated below carpal and tarsal articulations. Fifteen minutes later the legs were injected over the plantar nerves on distal side of ligatures with cocaine .2 grams (3 grains), eucaine .67 grams (10 grains), stovaine .67 grams (10 grains), respectively. Anæsthesia was complete in all in fifteen minutes.

EFFICIENCY OF ANÆSTHESIA.

44.—Plantar neurectomy; anterior limbs. Solution of cocaine, .67 grams (10 grains), sterile water 10 c.c. Injected 2.5 c.c. over each nerve. Operated upon left leg in three minutes. Anæsthesia complete. Operated in five minutes on the right leg. Anæsthesia complete.

45.—Open tendon sheath of long standing. Solution of stovaine .534 grams (8 grains), sterile water 20 c.c. Solution was injected around diseased area. In ten minutes the anæsthesia was complete.

46.—Sciatic neurectomy. Solution of stovaine .67 grams (10 grains), sterile water 10 c.c. Solution injected deeply over plantar nerve. Anæsthesia complete in thirty minutes.

47.—Firing for ring-bone. Solution of eucaine .8 grams (12 grains), sterile water 20 c.c. Solution was injected deeply over plantar nerves. Anæsthesia was complete in five minutes.

48.—Firing flexor tendon and suspensory ligament. Solution of stovaine 1.34 grams (20 grains), sterile water 10 c.c. Solution was injected over area fired. Anæsthesia complete in twenty minutes.

49.—Trifacial neurectomy. Solution of stovaine and adrenaline chloride; stovaine 2 grams (30 grains), adrenaline (1–1000) 20 gtt.; sterile water 30 c.c.

One-half of the above solution was injected over each trifacial nerve at the infraorbital foramen. The operation was performed on the standing animal. On the right side in thirty-five minutes and on the left side in twenty minutes. Hæmorrhage slight and anæsthesia complete.

50.—Trifacial neurectomy. Solution of stovaine and adrenaline chloride; stovaine 1 gram (15 grains); adrenaline chloride 10 gtt.; sterile water 15 c.c.

Cocaine and adrenaline chloride solution; cocaine .267 grams (4 grains); adrenaline chloride 10 gtt.; sterile water 10 c.c.

The above solutions were injected over the right and left nerves respectively. The operation was performed on standing animal. Anæsthesia seemed to be good with cocaine solution in ten minutes and with stovaine in twenty minutes. The animal was of a nervous temperament, and gave some trouble, causing more hæmorrhage than in experiment 49.

51.—Quittor. Stovaine solution; stovaine 2 grams (30 grains); sterile water 20 c.c. One-half the solution was injected over each plantar nerve. Anæsthesia was complete in thirty minutes and remained two hours.

52.—Removal of pappillary epithelioma above the orbit of a horse. Eucaine .267 grams (4 grains); sterile water 10 c.c.

Solution was injected at the base of the tumor. Anæsthesia complete in fifteen minutes.

53.—Firing spavin on both hind legs. Stovaine solution; stovaine .67 grams (10 grains); sterile water 20 c.c. One-half of the solution was injected on the inner side of each hock. Animal was fired in fifteen minutes. Anæsthesia was incomplete but pain was diminished.

COMPARISON OF EFFICIENCY IN RAPIDITY OF ANÆSTHESIA.

54.—*(a)* Cocaine solution; cocaine .067 grams (1 grain); sterile water 5 c.c. *(b)* Eucaine solution; eucaine .334 grams (5 grains); sterile water 5 c.c. *(c)* Stovaine solution; stovaine .534 grams (8 grains); sterile water 5 c.c.

Solution *(a)* was injected deeply over plantar nerve. Anæsthesia was not complete but fairly good. Operation performed in ten minutes.

Solution *(b)* injected over plantar nerve. Anæsthesia perfect in twenty minutes.

Solution *(c)* injected over plantar nerve. Anæsthesia complete in thirty minutes.

In no case did anæsthesia extend toward the proximal side farther than the point of injection of the anæsthesia solution.

55.—Removal of fifteen malignant tumors from the mammæ of English setter bitch (35 pounds). Stovaine solution; stovaine .534 grams (8 grains); sterile water 20 c.c. The solution was injected beneath the mammæ at the base of the tumor. Anæsthesia was complete in twenty minutes.

56.—Removal of root of premolar tooth. Anæsthetic solution: .6 grams eucaine, 2.4 grams sodium chloride, 30. gtt. of adrenaline chloride, 300. c.c. of sterile water. 150 c.c. of the above solution were injected into the subcutaneous tissue around operative area, and allowed to remain for ten minutes to elapse, but sense of pain was only diminished to some extent.

COMPARISON OF THE EXTENT OF AREA ANÆSTHETIZED BY SUBCUTANEOUS INJECTIONS.

57.—.334 grams (5 grains) of each drug, and sterile water, 5 c.c., were used on horses with the following results:

Cocaine, in ten minutes, an area of 2 cm. in diameter was anæsthetized and lasted one-half hour.

Eucaine, in ten minutes, an area of 1 cm. in diameter was anæsthetized and lasted ten minutes.

Stovaine, in fifteen minutes, an area of 3 cm. in diameter was anæsthetized and remained forty-five minutes.

RESPECTING AFTER-EFFECTS OF STOVAINE.

58.—Stovaine, .67 grams (10 grains); sterile water 10 c.c. Injected solution (warm) deeply into anterior legs above fetlock articulation of horse. A slight swelling appeared in twenty-four hours and remained about thirty-six hours.

59.—Solution as above (cold) was injected into anterior legs of another animal above fetlock articulation. A swelling appeared in twenty-four hours.

The swelling was larger and lasted longer than in experiment 58.

60.—Same amount of solution as in experiments 58 and 59. The solution (cold) was injected over suspensory ligament on each anterior limb. A swelling appeared in twenty-four hours and remained forty-eight hours. All animals in experiment 58, 59 and 60 had no exercise during experimental work.

In our work swelling has never appeared when an incision was made during anæsthesia, over the part injected.

LOCAL ANÆSTHESIA IN SPAYING BITCHES.

On account of the many fatalities in the use of general anæsthetics, and the nauseating and depressing after-effects, we have directed our work largely to the study of intraperitoneal injections of stovaine, to produce local anæsthesia in the spaying of bitches, hoping thereby to render this operation less painful and dangerous.

The technique was as follows: The area of the inguinal region and of operation was washed and disinfected. A hypodermic syringe and needle, together with a solution of stovaine, was sterilized by boiling. We always used 25 c.c. of water with varying amounts of stovaine according to the weight of the animal; 20 c.c. of the solution being injected into the peritoneal cavity, which amount was used so that there might be a sufficient quantity of fluid for diffusion and absorption over a large area.

TABLE OF EXPERIMENTS IN LOCAL (INTRAPERITONEAL) ANÆSTHESIA WITH STOVAINE IN THE SPAYING OF BITCHES.

Case Number.	Breed.	Approximate weight in Kilo (2.2 lbs.).	Amount of Stovaine in grams.	Volume of solution in c.c.	Position of animal after injection.	Interval of time in minutes between injection and operation.	Character of anæsthesia.	Remarks.
1	Collie	15.5	.134	20	On Side	10	B*	
2	Fox Terrier	5.4	.134	20	On Side	15	C	
3	Setter	16.6	.34	20	On Side	5	B	
4	Cocker Spaniel	12.4	.34	20	On Side	15	B	Ascites in small amt.
5	Fox Terrier	6.3	.134	20	On Side	15	B	
6	Fox Terrier	5.4	.2	20	On Back	20	A	
7	Collie	15.9	.267	20	On Back	20	A	
8	Fox Terrier	6.8	.267	20	On Side	15	A	
9	Bull	18.1	.267	20	On Side	15	B	
10	Coach	22.	.334	20	On Side	15	A	
11	Fox Terrier	6.	.2	20	On Side	5	C	Ascites of considerable amt.
12	New Foundl'd	27.2	.2	20	On Side	5	C	
13	Fox Hound	15.4	.534	20	On Side	20	A	
14	Black and Tan	3.6	.2	20	On Side	15	A	After the operation obturator paralysis was shown due perhaps to the solution paralyzing the obturator nerve; recovery took place.
15	Collie	17.3	.267	20	Stand'g	15	C	
16	Coach	13 2	.534	20	On Back	20	A	
17	Bull Terrier	20.	.534	20	On Back	20	A	
18	Collie	17.3	.4	20	On Back	20	A	
19	Boston Bull	18.1	.4	20	Stand'g	15	C	
20	Coach	14.5	.4	20	On Side	10	C	Ascites of considerable amt.
21	Bull Terrier	13.6	.4	20	Stand'g	15	C	
22	Collie	16.3	.334	20	On Back	20	A	
23	Coach	20.9	.667	20	On Side	15	B	
24	Collie	20 5	.534	20	On Side	20	B	Ascites in small amount.
25	Collie	18.1	.534	20	On Side	10	B	Ascites in small amount.
26	Collie	16.3	.334	20	On Side	30	A	
27	Setter	14.5	.334	20	On Back	30	A	
28	St. Bernard	38.6	.8	20	On Back	30	A	
29	Collie	15.4	.334	20	On Back	30	A	
30	Collie	13.6	.267	20	On Back	30	A	
31	Bull Terrier	13.6	.334	20	On Back	30	A	

* NOTE.—A = Complete; B = Incomplete; C = Absent.

The injection was made in the region of the internal inguinal rings, 10 c.c. being injected on each side. The remaining 5 c.c. were injected under the skin at the seat of operation.

We obtained the best anæsthesia when the animal was

placed on its back so that the solution would largely come in contact with the dorsal region and thus with the nerves of the ovaries and uterus. Stovaine is slow to take effect, and we have had better results when the solution was allowed to act from twenty to thirty minutes. When the animal was allowed to stand after injection, or when ascites was present, anæsthesia was either absent or incomplete.

CONCLUSIONS.

1. Relative toxicity.—We find results from the intravenous injections of cocaine, .534 grams (8 grains), eucaine 1.534 grams (23 grains), and stovaine 2 grams (30 grains).

2. Rapidity of action.—Cocaine acts in from two to five minutes; eucaine in from eight to fifteen minutes; and stovaine in from fifteen to thirty minutes.

3. Duration of anæsthesia.—Cocaine anæsthesia remains to thirty minutes; eucaine from thirty to forty-five minutes; and stovaine two hours.

4. Cocaine, eucaine and stovaine act on the motor nerves and are motor paralyzers. Experiments numbers 36, 37, 38, 39, 40 and 41 and case 14 in table illustrate this.

5. Area affected by drug.—In subcutaneous injection, the area affected seems to be only as far as the solution will diffuse. When injected over a nerve, the anæsthesia is always distal. This is of importance in the diagnosis of lameness.

6. After-effects.—After deep injections of stovaine into the legs, slight swelling was shown and disappeared slowly.

A HORSE COUGH.—Harry, aged four, while visiting his grandparents in the country, heard a mule bray for the first time. "Goodness!" exclaimed the little fellow, "that horse has whooping cough awful."

THE TENDER HEARTED BUTCHER.—"It must have been a very tender hearted butcher who killed this lamb," said the cheerful boarder, pausing in the sawing of his chop. "Why?" kindly asked the inquisitive man. "He must have hesitated three or four years before striking the fatal blow."—(*London Tid-Bits.*)

ONE WAY OF TREATING TOE- AND QUARTER-CRACKS.

By Roscoe R. Bell, D.V.S., Brooklyn, N. Y.

Read before Meeting of New York State Veterinary Medical Society at Buffalo, Sept., 1906.

In describing a method of treating these somewhat troublesome conditions of horses' feet, I will confine myself very largely to the title which I have adopted on the program, for the reason that veterinary text-books give full details concerning them, and they may be consulted at your leisure without consuming the time of this meeting for such a purpose. Under the title of "sand-cracks," their causes, pathology and treatment have been the subject of long chapters by all authors of such works from the earliest times down to the present day. I have carried my investigations of the literature through many of the works from Percivall's "Hippopathology" down to Reeks' "Diseases of the Horse's Foot," as well as fragmentary reading from the writings of Solleysel and Garsault in the 17th century. From this quest for knowledge upon the subject it is amazing to observe the slight progress that has been made in their treatment in all that time. There has certainly been no advance in the description of the conditions since Percivall's time; but then Percivall was a master of pure English diction, and almost any author in any age would suffer by comparison with the great writer, who might with propriety be classed as the Shakespeare of veterinary literature. How much progress had been made in Percivall's day over the previous half century I do not know, but in 1853 Percivall condemned what he styled the "old-fashioned" method of burning a transverse fissure across the crack near the coronary band and another about half way down toward the plantar surface of the hoof. Percivall ignored all mechanical means for holding the edges of the crack together, but it appears probable that he did so because he did not approve of them, for he only mentions the bandaging of the foot in "circles of wax-ends" to limit the expansion and contraction of the foot as much as possible. Yet clasps were popular in the

time of Solleysel, two hundred years previous. Solleysel is credited with recommending "the driving of a nail through both edges of the crack and securing it tightly," and it is probable that this custom was in existence among the farriers of fifty years ago, although I can find no reference to it in Percivall. Innumerable clasps have been employed from time to time to immobilize the sides of the crack, that of Vachette, requiring special instruments, being very much in vogue during the last quarter of a century. The clasps come ready prepared, made of strong wire, bent at both extremities, and slightly sharp. These are applied by straddling the crack and are secured by special nippers in notches made in the wall with a special cautery. These forceps press the teeth or sharp extremities of the clasp tightly and bring the edges of the crack firmly together. The objection which I have found with these clasps is that they gradually work loose, permitting the crack to open somewhat and then it is but a short time until the condition is as bad as before they were applied. Plates held in position by screws, made in all designs and of various materials, have been extensively used, and I have seen them accomplish good results in toe-cracks, but in the thin wall of the quarters they are not very practical, though I have occasionally seen them used to good purpose.

Percivall describes an operation which was quite successfully practiced by one of his *confrères*, which consisted in burning a deep half circle at the upper extremity of a quarter-crack, the apex being toward the plantar surface, reapplying the hot iron weekly until there was a bulging of the enclosed horn. By this means the upper extremity of the crack was entirely isolated from concussion and from the expansion and contraction of the coronary band.

Later the use of the iron was employed to make longitudinal lines along the course of the crack, being more divergent at their upper extremities, and coming together at a point an inch or an inch and a half below, thus forming a diagram resembling the letter V. More recently the drawing knife was used to

remove the horn enclosed within the lines, and thus secure the filling in of the area with solid horn, where previously there had existed a quarter-crack. This method has been practiced extensively by almost all veterinary surgeons of the modern school, and it is probable that it is the most popular surgical proeedure to-day for the cure of the condition.

It was while pursuing this method that I was led to enlarge upon the principle, with the result which I will endeavor to describe to you.

As already stated, I shall studiously omit to enter into a discussion of the causes of sand-cracks; but will merely summarize the conceded points by saying that quarter-cracks occur almost exclusively in the front feet, and much more frequently in the inside quarter than in the outside; in nine cases out of ten in contracted feet with high, straight walls, and principally at the point where the wall passes over the wing of the os pedis; in feet with brittle horn, and feet that are abnormally dry and devoid of elasticity, either from a subacute inflammation due to concussion or to the diseased condition which produced the contraction. To these rules there are exceptions. Well-shaped feet that are usually kept moist and are suddenly permitted to become dry are predisposed. Undoubtedly the most prolific cause of quarter-crack is contraction, where the internal quarter assumes an upright position or an obliquity running from outwards inwards. The inside quarter is usually covered by thinner horn than the outside. and being perpendicular it receives an undue amount of weight and concussion, and, being pressed outwards by the crowded state of the internal structures, it is little wonder that the longitudinal horn-fibres are rent asunder, and the crack started, to be constantly widened by the repeated application of the same forces.

Toe-cracks are so dissimilar in location and causation that they should not, in my judgment, be considered under the same heading, or they should not have such a related nomenclature. They usually occur in the hind feet, and are due to excessive straining of the horny fibres in pulling, particularly in start-

ing heavy loads, especially where high toe calkins are used.

Of course, either condition can be brought on by traumatisms, such as treads, blows, or other injuries, but the solution of continuity at the toe is mostly due to splitting of the horn-fibres by inordinate strain in progression.

For the purposes of brevity, I will make no mention of the numerous complications that often accompany these injuries, and which vary from a simple rupture of the horny tissue, without lameness, to sloughing of the laminæ or even caries of the os pedis, resulting in exfoliation of a portion of the bone. The inflammation proceeding from the sensitive laminæ may extend to the lateral cartilage, with quittor as a sequel, or the constant irritation produced by the continual opening and shutting of the quarter-crack may result in hyperplasia of the horny tissue and the production of keraphylocele. The wounded soft tissues of a recent crack may also become infected by the entrance of pathogenic organisms to such a degree that general septic poisoning may occur with death of the subject as a result.

As a general proposition, quarter- or toe-cracks as we find them in practice are accompanied by a moderate degree of lameness, due to the irritation and inflammation of the sensitive laminæ by friction against the irregular surface of the divided wall, or in some instances the opening of the crack when the foot is upon the ground may cause a hernia of the swollen soft structures into the cleft, and when the foot is again elevated these tissues are caught and pinched by the sides of the crack as the wall contracts, thus increasing the inflammation and the lameness. Or dirt and gravel may enter through the open seam to produce similar effects.

If the animal be placed at rest and antiphlogistic measures adopted the inflammation will subside and the lameness disappear, to return upon reapplication of the exciting cause. Such cases, properly shod, may be kept at regular work for a longer or shorter period, but they usually grow worse, until finally they are no longer able to continue to be used. Under various forms of treatment, many will in time entirely recover, and the

crack will disappear by the wall growing down solidly from the coronary band. But the rule is that they persist, or return, and in time the foot becomes misshapen.

The method which I will describe will cause the animal to be laid up for a short time, say two or three weeks; but the result will be a radical cure in the vast majority of cases, and the animal may resume its work at the expiration of a fortnight with very little risk of a return of the trouble, and I usually regard the seat of the lesion as stronger when sufficient growth has taken place than before the crack occurred.

For quarter-crack an essential instrument is the flat or line-firing point of a thermo-cautery. This, heated to a dull red, is employed to make a deep furrow at the bottom of an incomplete quarter-crack (the one beginning at the coronary band and terminating half way down the wall), or midway of a complete one; another groove, not so deep, on account of the thinner condition of the horn, is made at the upper extremity of the crack. These furrows extend from the inner toe back to the heel, or just where the wall is deflected to form the heel. Perpendicular lines may then unite the two horizontal grooves, or the flat side of the firing iron be laid upon the horn enclosed by the grooves and held there until the horn is rendered soft and easily cut by the drawing knife, which is then employed to remove all the horn down until it is so thin that blood begins to ooze through the surface. This is accomplished after the dense outer horn has been cut away, by scraping with the curved point of the drawing knife. The entire surface should be made of equal thinness, no difference being observed as to whether it is near to or distant from the crack.

The flat cautery point is again employed to deepen the grooves already made horizontally, particularly the lower one, and the convex border of the iron, quite hot, should be passed rapidly backwards and forwards over the thin horn until it penetrates almost or entirely through it, which will be denoted by a sizzling sound as the hot iron comes in contact with the soft tissues. It is not necessary to pass entirely through the horn

except in the immediate vicinity of the crack, but it should be weakened the entire extent of the original groove. It is well to make a number of horizontal lines across the crack at various points upwards until the last one occurs over the coronary band, but none except the lowest should pass through to the sensitive laminæ, and the upper ones may be much shorter than the bottom furrow.

When this has been completed, the entire cavity is filled with an antiseptic ointment having lard or other animal fat as a base; a wad of cotton or lint is laid upon it, and an ordinary hoof bandage is snugly and neatly applied. To insure its remaining in place for several days, it is well to lock the bandage at the heel with a reinforcing stay.

Nothing more is done to the case for four or five days, when the dressing is removed, and the field of operation is again scraped with the point of the drawing knife. In doing this all remains or the bottom of the old crack will usually disappear at this time, its place having been taken by new horn secreted by the keratogenous membrane. At the point where the firing iron passed through to the sensitive laminæ there may be slight thin discharge or there may be a little teat of soft tissue bulging through the opening; this is not alarming and insures a permanent severance of the two sections of the wall. Occasionally, where considerable inflammation has been excited in the laminæ by the cauterization, the thin horn separates from the sensitive laminæ and can be removed *en masse*. So much the better for the final exit of the trouble. The dressing is again replaced, and the patient is not seen for four or five days, when sufficient growth has occurred to warrant the omission of a bandage. At this time careful examination is made at the point where the crack existed to make certain that all trace of it has disappeared; should any remain it must be scraped away until no evidence of it can be detected. The attendant is given some ointment and is instructed to apply a little every day to the affected quarter to prevent the horn from getting too dry and brittle, and if all is well at this time the

animal may be put to walking exercise after a day or two. At the time of your next visit, a week hence, slow work may be resumed and continued.

In shoeing, I usually advise the full Air-Cushion pad, which reduces concussion to a minimum; or a full flat pad, giving sole, frog and wall pressure equally over the entire foot; but never a bar pad, which throws too much weight upon the quarters and back of the frog, ceasing at a point about where the quarter-crack existed. A bar-shoe may be used if the surface bearing is properly regulated, which, in my judgment, should be equally distributed all over the foot. The method frequently adopted of omitting all bearing from the quarter back of the crack is abominable, and produces a great incentive to a return of the condition, as the concussion and pressure are thrown upon one side only of the crack, which would naturally have a tendency to jar it open by breaking the tender horny fibres as fast as they form.

The object of this treatment is to divide the fibres horizontally midway of the crack, thus preventing the effects of the solar concussion from being transmitted beyond the point of division, and at the same time to so weaken the wall above the point of division for a great distance on each side of the crack that the natural expansion and contraction of the hoof at the coronary band will not again break open the crack. If but a small area be removed, as in the classical V-shaped operation, the thick wall in such close proximity to the crack will continue to break it open upon the resumption of work. I have practiced this method for many years with very much better success than I obtained from any other means. I never, however, thought of dignifying it by imposing it upon others or of placing it upon record until some of my colleagues led me to believe that it was my duty to do so, since it greatly curtailed the usual long period of idleness which victims of quarter-crack were forced to undergo, and the embarrassment produced upon the surgeon by the return of the lesion would be largely obviated through the adoption of the procedure which I have endeavored to describe.

With toe-crack, which is a very much more serious condition, and more rebellious to treatment, the same principles maintain, with the addition that a well-applied horseshoe nail should first be driven through the walls of the crack a little above the centre, and tightly clinched. Then fire completely through the wall into the sensitive laminæ half an inch above the nail, removing the horn in the same manner as for quarter-crack, thinning it well to the sides of the crack. A four-calked shoe is best for this accident, one calk at each heel and one on either side of the point of the quarter, the wall being lowered at the toe so that no bearing is permitted for quite a distance on each side of the crack. The forward calks should be lower than those at the heels, and should be beveled in front, thus securing a rolling or rocking motion, and reducing the strain upon the front of the hoof in walking.

It will require a little longer time for recovery, or until the patient may resume work, for toe-crack than for quarter-crack —possibly four weeks. But when four weeks are subtracted from the time usually required by other methods where radical cure is attempted, the period seems quite short.

DEATH OF PROFESSOR PRITCHARD, M. R. C.V. S., F.C. S.— The death of this well-known and highly-esteemed English veterinarian occurred on Nov. 20th from pneumonia, following a severe cold, which caused him to take to his bed on the 16th. He was born at Wolverhampton, October 20, 1838, his father having been a veterinarian. He graduated from the London Veterinary College in 1860, and was almost at once appointed to the position of demonstrator of anatomy in his *alma mater*, became professor of that branch in 1867, which position he held until 1880, when he resigned to engage in private and consultation practice in the North of London. As a consultant and operator he was quite successful. He was a member of the Council of the Royal College for nearly twenty years, was President of the College in 1888–89, and examiner in veterinary medicine from 1882 to 1888. He was married in 1878 to a daughter of Principal Spooner, of the College, and leaves a widow and daughter.

THE MILK SUPPLY OF CITIES.

By W. G. Hollingworth, D. V. S., Utica, N. Y.

Presented to Annual Meeting of the New York State Veterinary Medical Society, at Buffalo, Sept., 1906.

It seems to me this is the opportune time to take up any subject that pertains to pure food. The improvement in our cities' milk supply is the problem of the hour. Nothing is of more practical importance to the community, because the whole community subsists on milk during the most critical period of our physical existence. A man's foes are largely within his own household. While accidents from whatever cause slay thousands, bacteria slay tens of thousands. Especially do they attack the weak, and most of them are infants, and a large majority of the deaths are due to impure milk. One-third of the babies, under three years old, succumb, according to statistics, and most of them die from some bowel difficulty due to faulty milk supply.

If some contagious disease should happen to break out in a city and a few deaths occur, the Board of Health and health officer start plans, and, barely possible, an emergency officer is appointed to coöperate with the health officer to put down the pest. Do these deaths that have occurred compare, so far as numbers go, with the mortality of babies? Compare the statistics and you will soon see which has the majority; but nothing is said about this. Now why is it not time to say something about sanitary milk, the most abused and neglected of any of our foods, not only by the producers but the consumers? There is no food of which we partake which is so sensitive to odors and germs as milk, and I think it is up to the veterinarians to take up this important subject and try and right the wrongs which are constantly taking place right before our eyes. I am afraid that the veterinarians have not taken this important problem into serious thought and consideration. There is a bright future before each and all of us on this line. Why, just think of it, by taking the pure milk subject in hand, and through your

influence you produce it, some of you are going to save the lives of many innocent babies which, if they lived, might have made a mark for herself or himself of which the veterinary profession might have been proud. You may make enemies, but where you make one enemy you will make one hundred friends. In acting, we want to be fearless; when you are right, go ahead: remember good things come to him who waits. We must not expect to accomplish this important subject in a short time. To make pure milk possible, we as veterinarians and sanitarians must start and educate the producers and consumers, and we are the only ones that can do it; so I think there is a great responsibility on our shoulders. Hygienic surroundings must be brought about in this way. There is not one of us, especially those that have a mixed practice, who could not tell some sad, neglected, farm buildings where dairies are kept. I will not enumerate them in this paper, as it would take up too much space. Now, it is from this kind of producer that our unclean milk, teeming with bacteria, comes mostly. Show me a man's buildings and delivery wagon, and you can put it down he is delivering milk with countless bacteria to the cubic centimetre. We must personally talk with him and explain to him what he is doing, and the harm his result is likely to cause. Our constant aim must be to keep down the bacterial count, and this is where the secret lies. It is only within a few years that the purity of our milk supply to our cities has been at all looked into. It has been the aim of the producer, the consumer, yes, the laws of our state, to continually agitate the percentage of butter fat; as for me, I would rather drink milk with less butter fat and low bacterial count, than milk with excessive butter fat and alive with bacteria.

The dairyman will listen to what you have to say to him; then what will he say to you? Why, Doctor, I would only be too glad to do anything reasonable, if you secure a price for which I can produce the kind of milk you ask for. Pay more to the producer, charge more to the consumer, and try and get rid of the middleman; he is the one who gets all the profits that

belong to the producer. The public will pay for a good article, if they get value received. As I said before, the consumer, no matter what position in life he holds, is neglectful on this subject. Take the physicians as a rule, see how neglectful they are. Take, for instance, when he recommends a client getting milk from one cow. Does he recommend that a veterinarian be called to select the animal? No, the client many times mentions it first. Now, many times, the producer has to take upon his own shoulders the responsibility of picking one out of his herd. Who knows but this animal has tubercles or some other disease which would render the milk unfit for some sickly person. I would rather take a few quarts of milk from the whole herd than this one cow, if she has not been subjected to the examination of a veterinarian; he, and only he, can do this. We must go among the physicians and give them some ideas to think of. Some time ago, I secured the use of a hall, called a meeting of the producers and all consumers that would like to attend; the result was the hall was filled. I selected a physician to preside, and also one to act as secretary. I invited the Board of Health also. A paper was read and it was well discussed. The object of this meeting was to start the feeling that a better milk supply was required in our city. This did a great deal of good. The press thoroughly agitated the question for some time. One paper in its editorial mentioned the following: The milk inspectors got kicked about as hard as the farmer often gets kicked by the cow, and the Health Board and health officer got a solar plexus. As a result of this meeting, a farmer came to me and said he wanted to produce a milk that would stand any test, and asked my assistance. He started with nine cows; these were subjected to the tuberculin test; one reacted. Post-mortem revealed localized tuberculosis. I told him of the necessity of cleanliness. He said, I will do just what you ask me to do. By the time we got things in working order our bacterial count was 8,500 to a cubic centimetre. A sample of this milk is taken quite often to the bacteriologist, and he reports according to his finding. By this he knows just how he

stands. He had circulars printed, and sent them to all physicians and picked consumers. Some of the physicians called attention to this milk, and a number of the physicians' clients secured this milk. The results obtained were wonderful. Some babies who could not retain the milk they had been getting had no trouble whatever with this; the same with some of the older members of the family. A physician in charge of one typhoid patient, who could not retain the milk that was left at the hospital, secured a bottle of this milk, and from the very first he retained it all through his sickness. It no doubt greatly benefited him. This dairyman has now introduced a milking machine, which has still lessened the bacterial count. A number of times the test has failed to show any filth bacteria. He now has forty-three cows, all of which have been subjected to the tuberculin test, and more milk is asked for.

In regard to the milking machine, I would say that it requires considerable attention to keep it perfectly clean. I have made up my mind that this will be a good way to get a better milk supply, one milkman at a time to fall into our ranks.

I do not think it advisable to use harsh means, because the dealer might think it was a scheme to financially aid the veterinarian, but when he sees Smith or Jones' business increasing and getting some of his customers, he is going to produce or try to produce as good milk as the other fellow. Get this feeling started and you will get results; that is just what is happening now.

This delivering milk under assumed names is something to be looked into. You will see wagons with certified milk, sanitary milk, pasteurized milk, and sterilized milk printed on them. Now, if they only produced this kind of milk, it would be a good thing, but it misleads the public. I know of one dairyman who advertised certified milk, and received eight cents a quart at his milk house for it. This herd was tested and every one reacted to tuberculin. A post-mortem of each one was held and tubercles in one form or another were found in each one.

I remember another dairyman who was doing the same thing. He asked me to come up and see some cows which had sore eyes. Now, on my arrival, and this was in the winter time, I noticed that steam was escaping from around the crevices of the doors and windows. I opened the door and it came out so thick that I fell back and stayed out until some fresh air worked its way into this stable. I asked him what all this meant? He said he left all the manure in his stable all winter so it would keep the stable warm from the steam which arises from it. Now, he was milking at the time and the receiving can was in the midst of this filthy condition of things. The cause of the sore eyes was easily determined.

Now, for this reason and many others I think all cities should have a milk commission to take charge of the milk supply, and they should have a veterinarian to inspect all dairies that send milk to the cities, and also employ a bacteriologist, and at different times samples of the milk should be sent to him for examination. Should the bacterial count be high, trace the cause.

The City of Rochester, through its health officer, Dr. Goler, has made great improvement in its milk supply. A municipal milk plant was started in the year 1897. Now, according to statistical tables the number of deaths of children, under five years old, from the period of 1888 to 1896, under the old line of milk supply to the city was 6,659; during the period from 1897 to 1905, under the improved system, it was less than one-half. The total number of deaths during July and August of the first period was 2,005, while the total number of deaths during July and August during the last period was 1,000, notwithstanding the population had increased in the neighborhood of 30,000 in that period. Now, that is what I call good results. His aim has been to keep the bacteria count down as low as possible, and the price of milk that the farmer received was four and a half and five cents a quart. Now, if Rochester can get such results, why, any other city can do the same, if the boards of health and the health officers would only get active and wake up to the fact —that is if we cannot get dealers to produce it.

We individually and through our societies are the ones to agitate this. We know better than any one else how to establish these dairies. See the diseases communicable to consumers by the milk. There is tuberculosis, typhoid fever, scarlet fever, diphtheria and many others. Take typhoid, for instance, after a patient has recovered so as to be around and can attend to his duties, the physician says, go on with your duties. This same person may disseminate the germs of this disease through the intestinal discharge and urine for a great length of time and many countless numbers of bacteria be discharged. Now, under certain circumstances such discharges or the dust from such may contaminate the water or milk, and when such an accident takes place, a comparative small pollution may lead to a widespread outbreak by the consuming of the milk. The same may happen with all the other diseases which I mentioned before, and especially with tuberculosis. Now, if we had veterinarians as inspectors and they did their duty, it would be up to them to guard, and know whether any contagious disease existed in any of the families of the producers, and if so, a strict quarantine could be established.

In regard to tuberculosis the state should appropriate enough money whereby they can stamp it out of any herd that calls for this action, and I know there would be a number of applicants if they could be compensated, and this one act would stimulate dairymen to establish sanitary dairies. Naturally the milk from a healthy cow is pure, but through the neglect of the producer it becomes teeming with bacteria, which means death at so much a quart. On the other hand, if the producer renders a good article, the consumer is most neglectful in the care he or she gives it, and the producer gets blamed for something he is innocent of. We must get among these dealers and talk to them in regard to their buildings, and soon our advice will be sought for when the producer sees a profit ahead; the idea of working for nothing is not common sense.

The public can get milk for just what they want to pay for it, dirty or clean; if they demand a sanitary milk, let them pay

the price to produce such a quality. The price the producer receives, in many instances, is inadequate to compensate him for the care that pure milk requires. The price prevailing in my locality encourages unwholesome milk.

I think the public should visit the dairies oftener than they do. Many consumers do not know the names of their milkmen, let alone where they live. There are a great many milkmen delivering milk that they get from four or five different producers; by so doing if he, the producer, is not very observing, he will receive milk not up to the proper requirements.

I think all milkmen delivering milk to cities should be registered, and no one should receive a license who does not live up to the laws, and if it is necessary let us have such laws enacted.

Where it is possible, the producer ought to deliver his own product; then he is accountable for the quality of the milk he sells. A good dairyman will court inspection. Some dairymen will ask you to see the machinery in their milk houses. You will find pasteurizers, sterilizers, centrifugal machines, etc. Now, these look nice when they are clean. They will tell you the milk will keep longer when put through these mechanical inventions, but if the milk is rendered pure and wholesome, free as possible from bacteria, these additional instruments are unnecessary.

The care of the milk on the farm must receive the greatest amount of attention. The animal heat must be removed as soon as possible; it can be done in a number of different ways, and this should be done in a milk room, in a separate building from the stable. The milk should not be exposed to the stable odors, etc. The milk from each cow should be taken to the milk house as soon as milker has finished, and the milker must be instructed in regard to cleanliness. The temperature from 45 to 50 Fahrenheit is required. After the animal heat has been removed it is taken to the dealer; that is, if the dealer does not deliver his own milk to the consumer. Now, this milk may

have to be taken a great distance. How do they carry it? In an open wagon exposed to the sun's hot rays. Does this do any good to the milk that previous to starting the animal heat had been taken out? No. The temperature will, no doubt, be a great deal higher when he arrives at his destination. This is rendered very easy by putting a covering over the wagon.

Now, in regard to delivering milk. I think the most sanitary way is in bottles. All milk is bottled then at the farm or station. Carrying a can and filling bottles on the street is a disgraceful act, and shows a very neglectful state of affairs; either deliver from a can or bottles. Bottles are very easily sterilized. When the can is used and consequently a delivering pail, the dirt from the street must enter therein. Who knows what this dirt contains; some weak stomach will tell the tale; a physician is summoned, and probably the undertaker next. There is another way by which milk is delivered; that is by the stores. They will contract with the farmer for his whole output and retail it out for the same price they paid for it. In this way they figure to increase their trade. They put it in their refrigerators with a hundred other things, probably exposed to the odors of all. The consumer buys it because it is cheap. It may be cheap at the time of buying, but mighty dear later on.

The consumers are not to be negligent in regard to the care they give to the milk. It is pitiful, I think, to think of the neglect that this necessary food, required for our early existence, receives, especially when there are so many babies brought up on bottles as nowadays. I think writing articles at different times and giving them to the press, is a good way to educate them. Somebody will read them and they will tell others. And do not be afraid to let it be known who is doing this work. The grateful expressions you will receive will more than compensate you for the trouble you have been put to.

Now, in finishing this paper, I will say that the failure of the general public to recognize the facts alluded to, and act accordingly, are the chief reasons for the slow improvement of our cities' milk supply.

MODERN VETERINARY METHODS.*

By Walter J. Taylor, D. V. M., Ithaca, N. Y.

DIFFERENTIAL DIAGNOSIS.

The term Differential Diagnosis signifies the qualitative distinguishing between diseases of similar character by comparative symptoms. Inasmuch as so many of our animal diseases are similar in their manifestations, it is of the utmost importance to be able to make a proper diagnosis. The two diseases most widely spread and destructive to the animal kingdom, namely, tuberculosis and glanders, will be treated first.

TUBERCULOSIS.

Tuberculosis is one of the oldest known maladies affecting man and animals. It received the name of "the great white plague," due to its peculiar symptoms in man during the later stages, producing extreme emaciation and pallor. It seems to have been known to the Jewish people during their Egyptian captivity and the ecclesiastical laws for many centuries contained numerous enactments against the consumption of flesh from tuberculous animals. The specific infecting organism, however, was not discovered until in 1882. In that year, Dr. Robert Koch succeeded in isolating a rod-shaped, non-motile organism possessing a peculiar staining property, which places it in a group known as *acid-fast* bacteria. Prior to the discovery of the etiological factor, tuberculosis was considered to be a hereditary disease. Since then it has been shown by experimentation that the offspring of tuberculous parents are rarely infected at the time of birth, but contract the disease in extra-uterine life. This is made possible by coming in contact with the contaminated discharges or secretions of the parent, usually the dam, or with some other infected animal. The tubercle bacteria are generally present in the sputum of the human subject, and Ravenel and others have shown this to be true of cattle suffering with pulmonary tuberculosis.

Symptoms.—Since the lesions of tuberculosis in cattle and swine vary so greatly in different cases, it is not possible to give descriptions of what may be called characteristic symptoms. Emaciation with good appetite, especially if accompanied by

* This series of articles was begun in the December Review, the first installment being on "Diagnosis." It will be followed by others on important phases of practical veterinary science.—Editor Review.

cough, rough coat and dry, harsh skin; continual bloating, loud respiratory sounds, hard, painless swellings of the lymph glands in the region of the throat and neck, or of the flank and escutcheon; violent coughing after feeding, drinking or moderate exercise may be mentioned as some of the more suggestive manifestations of the disease. From the variety of symptoms and the extreme uncertainty of the position of the lesions, no hard-and-fast rule can be laid down for the diagnosis of tuberculosis.

The positive diagnosis rests in:

1. Finding the tubercle bacterium on microscopical examination.

2. The production of the disease in experimental animals by inoculating them with the suspected material.

3. Obtaining a decided reaction with the tuberculin test.

Differential Diagnosis.

Diagnosis in the Live Animal.—Tuberculosis is to be differentiated from actinomycosis, glanders and various parasitisms. In actinomycosis the ray fungus can usually be detected under the microscope. This fungus is present in the pus from the actinomycotic abscess. As to glanders, animal inoculations, cultures or the mallein test will reveal the presence of *Bacterium mallei.* As a rule, the horse is rarely affected with tuberculosis, at least in this country. In Denmark, on the other hand, it is quite prevalent in horses, owing to the fact that in that country milk is often given to horses as a part of their diet and the disease is contracted through the ingestion of the milk from tuberculous cattle. Certain nodular swellings on the walls of the intestine and elsewhere might be mistaken for tuberculosis. In cattle these nodules are produced by an œsophagostoma. In sheep they are caused by *O. columbianum.*

It is only possible to diagnose tuberculosis by microscopical examination when one has the discharges from tuberculous lesions. In case the lungs are involved the sputum is used. If it be from the contents of an abscess, scrapings from the wall rather than the purulent material should be used.

A Method for Staining Tubercle Bacteria.—Smear a cover glass with the suspected material and allow it to dry in the air. Fix the smear by passing it through the upper part of a gas flame about three times. Rinse in water and cover with fresh carbol fuchsin. Hold over a small flame until steam is given off and allow the hot stain to act 3 to 5 minutes. (The smear may be stained cold, allowing stain to act 10 to 15 minutes.)

Rinse in water and treat with 10 per cent. sulphuric acid for ¼ to 1 minute, rinse again in water. The cover glass is then placed on a slide film side down and all excess of water removed from the surface by blotter or filter paper. The preparation is now ready for examination. The tubercle bacteria should be stained a deep reddish color, while all other bacteria and animal tissue on the smear should be nearly or quite decolorized.

In case of failure to diagnose tuberculosis by the means already pointed out, we may resort to the specific means in the use of the tuberculin test. This test in reliable hands seems to be most gratifying in its results.

The Application of the Tuberculin Test in brief is as follows:

1. The normal temperature of the animal to be tested must be determined. It is well to take the temperature as many times the day previous to the test as possible. Ordinarily two or three times will suffice.

2. The tuberculin is injected subcutaneously in the side of the neck or just back of the shoulder. Care must be taken that the syringe is sterile, and the site of injection should be disinfected. Carelessness in these points may lead to a septic infection.

3. Beginning 6 or 8 hours after the injection, the temperature should be taken hourly, or at least every two hours, for fully three-fourths of a day.

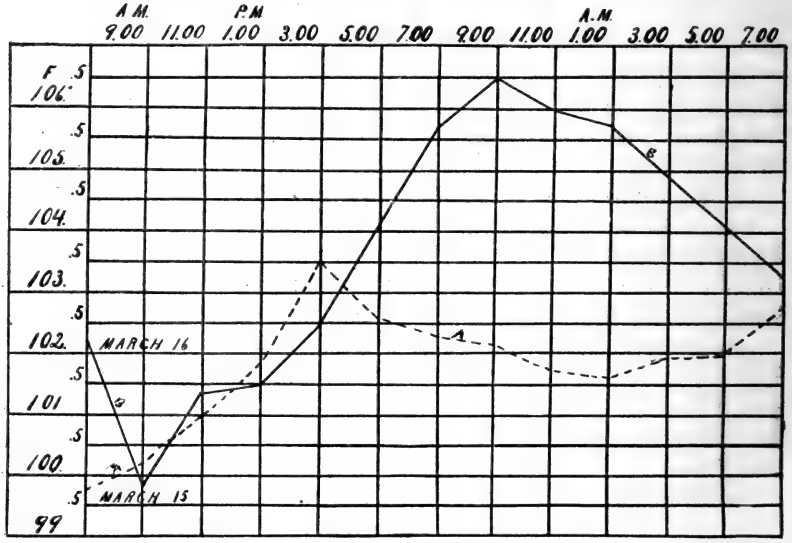
4. During the time of testing, the cattle should be kept quiet and free from exposure, and fed and watered normally.

5. In case of reaction, there should be a rise of at least 1.5° F. above the maximum individual normal temperature as determined on the preceding day. The elevation should come on gradually, remaining practically at its fastigium for a few hours, and gradually subside. Erratic elevations of short durations are to be excluded. In cases of doubt the animal should be retested.

6. Animals advanced in pregnancy and those known to be suffering from any disease or in œstrum should not be tested. All methods of treatment, including exposure to cold, or kind of food and drink which would tend to modify the temperature, should be avoided.

7. The dose should vary to correspond to the weight of the animal. The dose for an adult cow of average weight is about 2 c.c. of the ordinary commercial tuberculin. In case of the second test within a few days, the quantity of tuberculin injected should be larger than for the first test.

The following chart will show the temperature curve of a tuberculous cow for 48 hours. The line A.A. shows the temperature for the day preceding and b,b,b, the day following the injection of the tuberculin, which was injected at 9 A. M.



Diagnosis from Post-mortem Findings.—As already pointed out, the lesions of tuberculosis vary so greatly that one has no definite idea as to their probable position on post-mortem examination. In keeping with the natural tendency of the specific organism, the particular channel of infection plays a prominent part in the location of the lesions. Tuberculosis due to infection through the respiratory tract usually manifests itself in pulmonary lesions. Often, however, through abrasions of the mucous membrane of the respiratory tract, metastatic or secondary tuberculosis is not uncommon. Thus the disease contracted through this channel may give rise to lesions in the bronchial or mediastinal groups of lymphatic glands, while the primary pulmonary focus may be so slight as to be overlooked.

Tuberculosis contracted through the agency of the digestive system very often gives rise to lesions in the mesenteric lymph glands, portal glands, liver, spleen and pancreas. Lymphoid tissue seems to be an especially fertile field for the development of the organism. The lesions in the intestine, as a rule, assume the form of ulcers of the mucous surface. Nodules due to

tuberculosis on the serous coat of the intestine are exceptional. When nodules are encountered on this surface, they are quite likely to be of parasitic origin and a section through the centre will reveal the worm or the debris left by such parasite.

Structure of the Tubercle.—The characteristic lesion in tuberculosis is the tubercle. Where the *Bacterium tuberculosis* becomes implanted, the fixed tissue cells are stimulated to an undue proliferation. These are soon surrounded by a layer of giant cells, outside of which appears a zone of lymphoid cells, the whole being held together by a fine fibrous stroma.

A striking characteristic of a tubercle is the occurrence of caseation necrosis. This begins in the centre of the specific nodule as a whitish or pale softening and degeneration of the tissue elements and gradually extends toward the circumference. The cells and even the proximate tissue elements die and degenerate, passing into a structureless, granular debris, which has been named from its supposed resemblance to old, soft, ripe cheese.

The tendency to extensive central necrosis and caseation is especially marked in swine, in which the resulting debris is often so liquid that the tubercles bear a strong resemblance to abscesses.

In man, the pig, and especially in cattle, the deposition of lime salts is a common feature of advanced cases. The tubercle assumes a hard cretaneous aspect and feeling. When cut it grates under the knife and upon manipulation imparts a sandy sensation. This is generally an evidence of long standing disease.

Animal Inoculation for Diagnostic Purposes.—Occasionally cases arise in which animals react to the tuberculin test and upon post-mortem examination the lesions are so slight that a doubt is entertained as to the findings being of tubercular origin. In these cases, animal inoculation may do much in clearing up a doubtful diagnosis. The guinea-pig is preferable inasmuch as this animal is the most susceptible to the organism of tuberculosis of any of the experimental animals. Either one of two methods may be employed in the inoculation.

1. A small piece of the tissue about the size of a pea or bean may be used. With a sharp knife an incision is made in the region of the flank, through the skin and underlying fascia and a space carefully dissected away large enough to accommodate the piece of tissue used. With a pair of fine forceps insert the bit of tissue and close the opening with one or more sutures.

2. Crush the tissue in a mortar and thoroughly mix with a few cubic centimetres of sterile water or bouillon, injecting with a hypodermic syringe carrying a needle of large calibre. If the material is tuberculous and contains living tubercle bacteria, the animal usually dies in from three weeks to four months. As a rule, the lymphatic glands in the groin and axilla become enlarged and often caseous. The liver, spleen, lungs and kidneys of the guinea-pig are liable to be affected in the order named. This method of diagnosis may be utilized when the lesion may be excised without destroying the life of the animal.

(*Subject to be Continued.*)

THE VIRGINIA STATE VETERINARY MEDICAL ASSOCIATION will hold its next meeting at Richmond on the 10th inst. Dr. S. C. Neff, Staunton, is secretary.

"AUTO" SPEEDERS IN THE RIGHT PLACE.—It is a good thing for the automobilists that the speed-craze brotherhood are to have a roadway all their own, where they can speed to the limit, and beyond it for that matter, which is what they really want, without fear of the plebeian and vulgar tipstaff, his stop-watch and rope, who now mars the joy they take in violating the speed ordinance. It will also be good for the plain, ordinary kind of folk who don't own "devil wagons," but like to take an outing, or whose business compels them to be on the highways of Long Island, without risk of meeting with disaster to team or self. Mr. W. K. Vanderbilt, Jr., announced to his fellow-banqueters of the A. C. of A. at Sherry's the other night that the road (which is to be fifty miles long through the middle of Long Island easterly from the city limit) would be ready for their use shortly. Already twenty-five miles of right of way have been "donated" by enthusiasts, and a large sum subscribed for its construction. This modern via Appiana will constitute an absolutely private right of way, fenced for its entire length, with toll gates at intervals of five miles and bridges and tunnels at railway and highway crossings. The dust problem, which now vexes 'mobilists, will be eliminated by the use of oil or tar. As it will be on a 100-foot right of way with an approximate width of 250 feet, there should be no excuse for collisions, now so common on the ordinary highways. This is the only safe and sane way for automobilists to gratify their inordinate desire for covering a maximum of space in a minimum of time.—(*Brooklyn, N. Y., Standard-Union.*)

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."

ECZEMA.*

CLINICAL AND POST-MORTEM NOTES ON "SYSONBY."

By WILLIAM SHEPPARD, M. R. C. V. S., Sheepshead Bay, N. Y.

In bringing to your notice the following case, I hope it may prove of deep interest to all members present, and lead to an animated discussion, resulting in an acquired knowledge on the subject to the majority of us here.

This was a case the counterpart of which I have never before witnessed in my thirty-six years of active practice.

It is a source of deep regret to me that it should have affected, and terminated fatally in such a valuable animal, for which more money had probably been refused than had been paid for any horse in the world.

Unfortunately, I cannot furnish you with the symptoms and treatment adopted from the date of his first sickness to the time of his death, as after a certain period had elapsed the case was taken out of my hands, placed under the care of a human practitioner, who treated him unsuccessfully for some weeks, when other remedies were applied by different parties.

I was called in on March 12th of the present year to treat the four-year-old thoroughbred colt "Sysonby," owned by Mr. J. R. Keene. I found him suffering from an irritation accompanied by intense itching, the seat of trouble being more particularly around the coronets of all four feet, also on the horny growths on the inside of hocks and knees; at times he would turn, bite these parts so hard that he would lacerate them with his teeth. A close examination revealed nothing to cause this condition, no insect, inflamed condition of the skin, or eruption, not even when closely examined by the eye or magnifying glass.

Cooling lotions of plumbi acetatis and zinci sulphate were applied to these parts, with alteratives administered internally, but with no good results; at the expiration of seven or eight days an eczematous condition broke out in a virulent form

*Read by title at Buffalo meeting New York State Veterinary Medical Society, Sept., 1906. Read and discussed at October meeting Veterinary Medical Association of New York County.

around all four coronets, accompanied by a profuse discharge; these parts were nicely cleansed with a solution of Pearson's creolin, after which an antiseptic powder of zinc oxide, etc., was dusted over.

He was properly prepared, and given a dose of physic consisting of pulverized aloes Barb., six drams; calomel, one dram. This operated nicely, and for a few days he appeared decidedly relieved; after its effect had passed off he was allowed all the cut grass he cared to eat, and given daily exercise around the stable; he was also given one ounce of a saturated solution of hyposulphite of soda, three times daily.

The eczema now extended up his legs and both sides of his face. I continued the treatment of this case until about the 18th of April, when Dr. McCully was called in. On the 25th I met this gentleman in consultation, my diagnosis of the case was confirmed by him, also treatment, and I was again requested to take charge, which I consented to do.

I substituted the creolin solution for a solution of hydrarg. bichlor. around the coronets, and gave internally in solution two drams of potassium iodide daily; from this treatment I considered he derived benefit, although the improvement was slow.

On the 28th of this month I called Dr. Ryder in consultation, whose diagnosis agreed entirely with that of Dr. McCully and myself. The treatment he did not consider could be improved on, but agreed with me that the coronitis was the most serious feature of this disease.

On the first of May, his shoes were removed and feet trimmed; no external evidence of disease was visible on the bottoms of the feet; the blacksmith, who removed these shoes, was a very practical man; out of curiosity, I asked him how he considered the feet looked; he replied by stating that he never saw better; being suspicious that some deep-seated disease existed there, I had him take a thin layer off the frog, which exposed several small petechial blood spots. I then had the whole of the horny frog removed, and discovered in all four feet, a cankered condition to exist extending from the point of the frog three parts of the way back to the heel. This did not run down from the coronets at the heels under the horny frog, but appears to have commenced at the point, extending backwards, there being a space of possibly an inch at the heel in each foot that was perfectly normal. This was the most obstinate condition with which I had to contend. For two or three

days I allowed these feet to stand for an hour in strong creolin water, then they were wiped dry and dressed with a strong solution of carbolic acid and aloes; they made good progress under this treatment for one week, when on the 7th day of May Dr. Barrow, Mr. Keene's family physician, took charge of the case, and I did not see the horse again until June 16th, when I found him suffering from septicæmia, which caused his death the following day.

During the period I treated him his pulse and temperature were normal, with the exception of about forty-eight hours, when his temperature rose to $102\frac{3}{5}$, due to an application to his legs having a counter-irritant effect and causing his limbs to swell; on this being removed and cooling applications used, his temperature again became normal. Appetite at all times during my treatment of him good.

He never did go sore or lame, and it is well for me to mention here that at no time did he show any symptoms of a deranged liver, except the eczema be so regarded.

At times, I could detect on the schneiderian membrane of the nostrils injected spots the size of a quarter of a dollar, but nothing approaching what is characteristic of purpura.

After Dr. Barrow took charge of this case, the eczema apparently spread all over the body, and at the time of his death his skin presented the appearance of having been almost blistered, a scaly condition existing all over.

I had omitted to say that Dr. Clayton saw this patient with Dr. McCully.

The autopsy held by Dr. McCully and myself revealed a rather extraordinary condition. Between the layers of the abdominal muscles, a serous exudate existed an inch thick, resembling a yellow jelly; the small intestines were covered with extravasated blood patches; lungs healthy, but of course congested, heart normal, also stomach and large intestines; kidneys natural size, containing a few pus cysts, *liver considerably indurated and enormously enlarged, weighing sixty-five pounds.*

Dr. McCully took away with him a portion of the lungs and, I think, liver, for analysis microscopically, but, I regret to say, I have been unable to obtain the result. When Dr. Barrow took the case in charge, a specimen of blood and urine was taken, and analyzed, but nothing abnormal discovered.

At one stage of this case, in addition to the administration of hyposulphite of soda internally, I applied it to the eczematous patches externally.

At the time the case was taken out of my hands, it was my intention to administer internally liquor potassii arsenitis with tincture ferri perchloride.

There is one feature which I consider of the greatest importance to veterinary practitioners, if it can be definitely settled, as it may enable us to successfully treat in the future such malignant affections, should it be our misfortune ever again to be brought in contact with one.

The question which, to me, is the most puzzling is this: Was the enlarged liver the cause of the eczema and cankered feet, or *vice versa ?*

I trust, gentlemen, that I have succeeded in bringing before your notice a case rarely met with in veterinary practice, and one that the discussion which follows may add to my knowledge of the subject.

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(1) AN INVETERATE CASE OF ECZEMA—(2) A PERSISTENT CASE OF CANKER OF THE FEET.

By W. L. Williams, V. S., Ithaca, N. Y.

The very interesting report of the case of "Sysonby," by Dr. Wm. Sheppard, has prompted us to submit the records of two cases with a view of possibly increasing the attention to this important history, though confessedly shedding no clear light upon the character of the disease in the renowned racehorse.

1. *An Inveterate Case of Eczema.*

The patient, a common chestnut gelding, aged about 8 years, was entered in our clinic as No. 5,169, on April 15, 1904, because of severe eczema of the posterior feet, the sheath and prepuce, and of the eyes.

He had been under charge of Dr. V. for some time, without any benefit, and the persistency of the case, with its severity, led him to recommend the owner to enter him in our clinic, where he might have closer study and attention.

The fetlocks and pasterns of both hind feet were badly affected with an eczema which had destroyed much of the hair and epidermis, while from the parts there exuded an abundant yellowish serosity, which dried in crusts. It had somewhat the odor of "grease" and the feet were swollen moderately, but there seemed no tendency to assume the type of verrucose grease, nor to become complicated with elephantiasis. The general appearance of the parts was atypical as related to the or-

dinary forms of cutaneous eruptions, and seemed to suggest something aside from the general forms of skin disease met with in practice.

Concurrent with this and clinically a part of the affection there was present a severe conjunctivitis, or rather a conjunctivitis revealing itself by a very abundant conjunctival discharge externally over the face upon both sides, leading to extensive excoriations beneath each eye. The exudate from the eyes and subjacent skin closely resembled that from the heels.

The penis, sheath and prepuce likewise participated in the disease processes and the parts were excoriated, befouled with abundant discharges, swollen somewhat and quite sensitive.

Internally the horse was given twice daily: P. nux vomica, 1 dram; pot. nit., 2 drams; arsenic, 2 grs.

The fetlocks and pasterns were washed thoroughly with 1-1000 corrosive sublimate solution and liberal packs of surgeon's cotton saturated with this were applied to the affected parts and retained with bandages, the packs being wetted frequently with the solution.

The eyes were cleansed and dressed daily with a collyrium consisting of cocaine, 2 grs.; pyoktanin (1-1000), 4 drams; pot. iodide, 20 grs.; aqua, 1½ ounces.

The penis and sheath were carefully washed with a 1 per cent. lysol solution and dressed with an ointment of 1 part carbolic acid and 30 parts lard.

In a few days eczematous patches appeared on the upper lips, which were dressed with tincture of iodine.

No material change was brought about by this line of treatment, and on April 21 we penciled the excoriated parts about the fetlocks with stick nitrate of silver and followed with an application consisting of the tinctures of iodine and arnica and of glycerine, equal parts.

On April 23, the collyrium first mentioned was replaced with a 5 per cent. solution of potassium iodide. This was replaced on April 27 by a 10 per cent. solution of tannin and on the following day this was changed to a 2½ per cent. solution of atropine sulphate.

On May 2 the heels were healing slowly under the most scrupulous daily attention; the penis and sheath were well; the eyes were much improved. At this time he was discharged, with directions to continue the tincture of iodine, tincture arnica and glycerine, equal parts, to the heels; pyoktanin and cocaine to the eyes.

On November 16, 1906, the owner reports that since his discharge from our clinic he has continued at his accustomed work except for about two months during the summer of 1906, and has kept in good general health and spirits, but the eczema has continued throughout the period, so that the affection has now existed for nearly three years. The sheath is much inflamed and swollen and a very fœtid odor emanates from the horse, apparently not from the sheath, but from the general body surface.

The discharge from his eyes has grown less than formerly, and, in fact, has well nigh ceased, and he is virtually blind.

The heels recovered nicely and gave no further trouble until June last, when he was once more laid up for two months on that account.

The previous application of arnica, iodine and glycerine was used.

We have related here a case of eczema which has shown a very persistent character without at any time during its prolonged history interrupting the appetite, digestion or general vigor of the patient, and yet the lesions persisted or recurred in spite of any or all precautions which we were able to devise.

2. Persistent Canker of All Four Feet.

Patient number 6,313, a large chestnut draft gelding, aged 7 years, was entered in our clinic on April 12, 1906. The horse had been purchased recently in the Tattersalls, in New York City, because of unsoundness of his feet, but had gone well while at rest on pasture, and nothing had been noted amiss until a day or two prior to his entrance into our clinic, when he was shod preparatory to being put to work, after which he at once became intensely lame in the right hind foot.

An examination revealed an extensive separation between the wall and sole extending almost entirely around his hoof and upward for a varying distance between the wall and laminæ, reaching almost to the coronet at some points.

After due preparation the patient was placed upon the operating table and anæsthetized. The hoof was washed and disinfected and the underrun wall and sole completely removed, which left only a small amount of wall and included probably 25 per cent. of the horny sole and frog. The foot was then thoroughly disinfected and packed in an abundance of surgeon's cotton and oakum saturated in 1–1000 sublimate solution, over which tar bandages were applied. The dressing was not re-

moved daily, but from time to time, as occasion seemed to indicate, the horse was replaced upon the operating table and the parts carefully disinfected and dressed as before. The dressing could not be effectively applied with the patient standing. On May 7th the right hind foot seemed to be healing nicely, but while on the table an examination of the left hind foot revealed a fistula which extended down to the wing of the os pedis, which was found necrotic. The underrun wall and sole were removed, the necrotic bone curetted away and the diseased tissues were dressed with tampons of surgeon's cotton saturated with equal parts of carbolic acid and linseed oil and over this was applied an abundance of oakum saturated with 1–1000 sublimate solution and secured in position with a tar bandage. The horse was now placed upon the table daily and the feet carefully dressed. On May 10th there was a great quantity of pus found in the diseased quarter of the left hind foot, but its source of origin was not determined. The superficial parts were dressed with tincture of iodine and over this the antiseptic pack and tar bandages were applied as before. On May 11th a careful examination of the left hind foot showed that the pus mentioned on the previous day emanated from the region of the coronary band and that a fistula extended upward from the pedal bone behind the lateral cartilage and that the suppurating cavity occupied almost the entire inner surface of that cartilage. The horn was removed from the quarter and the fistula was opened up through the coronary band and the lateral cartilage and a large part of the latter removed, after which the abscess cavity was packed with gauze saturated with tincture of iodine and over this an antiseptic pack and tar bandages applied. At about this period the shoes were removed from the two anterior feet and a careful examination revealed canker in each of these, chiefly between the frog and bar and involving the quarters. The areas were carefully uncovered and the diseased laminæ were burned with a hot iron and dressed dry with calomel and tar bandages applied to protect against moisture. On April 30th all underrun portions of horn were carefully removed and all the feet dressed with cotton saturated with equal parts of carbolic acid and linseed oil. This general line of treatment was continued, all underrun horn was removed whenever discovered, and the diseased laminæ were dressed, either with tincture of iodine, or with equal parts of carbolic acid and linseed oil or with a dry powder like calomel or compound alum powder and, in some cases where the soft tissues were quite necrotic,

the hot iron was applied. In a general way our observation was that the equal parts of carbolic acid and oil constituted the most effective disinfectant and desiccating application which we could command, and that tincture of iodine possessed a very high efficiency where the proliferation of the laminæ was not too great. The horse gradually improved and by June 1st all suppuration had virtually ceased and the exposed parts were granulating normally, and a few days later he was discharged apparently cured.

After his removal from our clinic he was given entire freedom in a pasture for the summer and seemed to improve in condition for a time, but later the canker recurred in his feet and he began to lose condition. He is now still affected with the canker, has not performed any labor since brought from New York city, well-nigh a year ago, is greatly emaciated and virtually worthless.

The case is suggestive of some serious constitutional disturbances, else we cannot well account for the infection in all four feet. While the horse was in our care he was kept in a large box stall with a cement floor and well bedded with shavings, and when the weather would permit was kept during the day in a clean grass paddock. During a great part of the time the horse was recumbent while in the stall and there was little opportunity for external influence upon the causation of the disease, and yet during the entire course of the malady new foci of disease were constantly appearing at points in the hoof which had previously been apparently sound and without known injury of any kind whatever.

While we would not pretend that these two cases are like that of "Sysonby," it seems to us that they are highly suggestive of some serious constitutional disease as the cause of many cases of inveterate eczema and canker in the horse. We constantly observe in clinical work a strong tendency for constitutional disturbances to interfere with the pododerm and neighboring skin in horses. Such is the case in laminitis, which generally follows upon an attack of indigestion or upon acute metritis. While we note the principal effect of the disease upon the pododerm, yet in some cases following laminitis we see almost a complete loss of all the permanent hairs in the mane and tail and not rarely the skin gives off a well-marked and abundant odor which is highly characteristic of the disease. We thus see clearly the close relationship existing between cutaneous disorders and deep-seated disease processes. It is

further a common clinical experience that internal medication has a profound influence in some cases upon the course of the affection. Various authors have recorded excellent results from the internal administration of potassium iodide. In the case of "Sysonby," Dr. Sheppard records an apparent betterment following the administration of a single dose of aloes and calomel. In the light of the post-mortem findings this seems to us significant, and that in reality this fact offered a clue to a course of treatment which might well have been followed. Aloes and calomel exert probably as good an influence as any other known agent upon the liver and after the revelations of the post-mortem examination of "Sysonby" one might well surmise that it might have been profitable to have continued these two drugs in small doses.

TRACHEAL COLLAPSE.*

By C. C. LYFORD, M. D., D. V. S., Minneapolis, Minn.

October 4th, 1906, I received by express, trachea of gray gelding from Victoria, Minn., and telephone message from the owner saying he had found the horse dead at 5 o'clock that morning; that the horse had worked on the farm the day previous in apparently his usual health, excepting showing a slightly increasing difficulty in breathing if made to go faster than a walk. This tendency had been noticed somewhat for about three weeks, and to have become more noticeable at the end. On September 5th the owner had called at my office to see if I considered it advisable to perform arytenectomy, and to replace the aluminum rings with a tube of sufficient length to extend from larnyx to beyond the lower opening. This tube I had devised of same diameter as napkin rings with an attachment for rosette at upper opening where tracheotomy tube was used. This attachment would have been about 5 inches from upper end and 15 inches from lower end and made of spiral coil of silver wire, which device I now believe would have proven successful, as it would have allowed free passage of air through the entire upper half of trachea. The owner could not spare the animal from his fall work, so this change was not made.

No. 1.—Anterior view of about 2½ feet of trachea, lying on

* These notes were intended to follow the "Report on Surgery," published in the December REVIEW, thus completing the description of the gray horse operated on by Dr. Lyford for tracheal collapse; but it was received too late for insertion in that number. To render this article intelligible the reader is referred to the original description in the December number.—[Editor REVIEW.]

its left side with the left ends of cartilaginous rings of trachea bearing on the table, with rosette, *a*, and upper opening, *b*, showing somewhat to the *left* of centre of trachea. This would not have amounted to much under ordinary circumstances, but in this instance the membranous portion of trachea was on the left side instead of posteriorly, hence the abnormal condition had more to do with the collapse than the making of opening to the left side of trachea, though the cutting of 5 rings for the upper opening and 6 rings for the lower, aided in the collapse by weakening the abnormally weak and distorted trachea.

c shows cut into *centre* of larynx and 3 upper rings of trachea, simply indicating that both openings below are to the *left of centre*. *a* is the rosette, to which aluminum rings are attached.

b is the opening through which rubber hose was passed and retained during the months of May and June, till July 1st. During or from July 1st to October 4th the tracheotomy tube was made use of in connection with the aluminum rings. This is the opening from which the ossified tumor was removed, of which I spoke in my report and will notice later.

No. 2 shows the trachea lying on its right side, giving an idea how completely the upper portion has collapsed, showing only the ends of cartilaginous rings, while the entire left side, as seen, is membranous bands varying greatly in thickness and length, attached to the corresponding ends of the cartilaginous rings; so that the antero-posterior diameter of trachea is from 3½ to 5 inches, while the lateral diameter was often less than half an inch, until we have passed that portion containing the aluminum rings—from there down the trachea gradually returns to a more normal shape.

a shows the portion containing aluminum rings. A slight cut is made in upper part to show thinness of membrane—it also shows position of the two rings with wire connection.

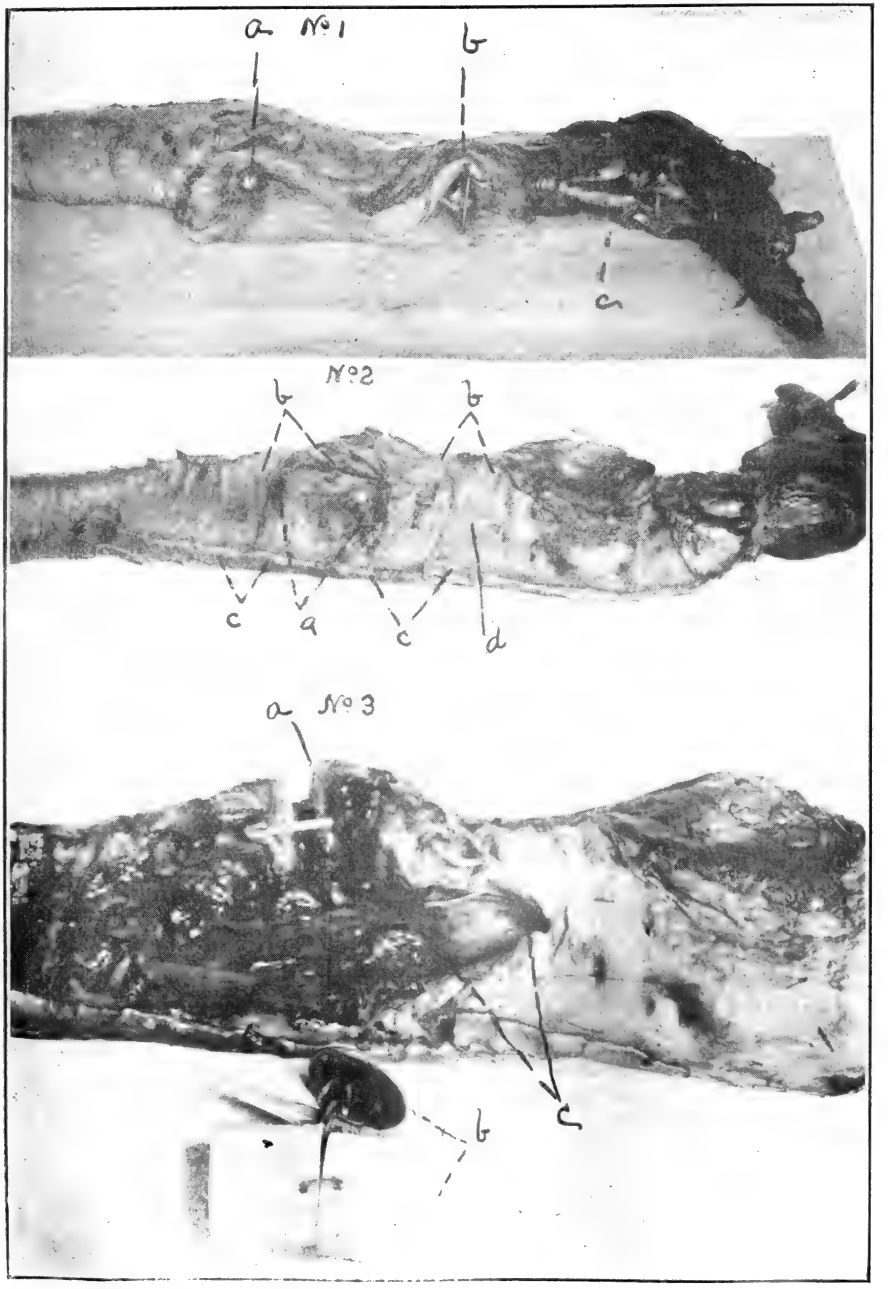
bb the upper or anterior ends of the cartilaginous rings.

cc lower or posterior ends of same.

d membranous portion of trachea between the two openings—being more than twice as thick as that immediately above and below—is where the cartilage had been cut.

No. 3 is an enlarged view in same position as No. 2, but having the aluminum rings removed by cutting between two cartilaginous rings of trachea.

a shows cut made to remove rings. The cutting from upper end of cartilage required an incision of something less than an inch, whereas had we cut from lower ends of same car-


a
No 1
b
c
No 2
b
b
c
a
c
d
a
No 3
c
b

tilage, on opposite side of trachea, it would have required an incision of more than 5 inches to reach rosette.

b, rosette and rings attached.

c, a hæmorrhagic clot formed under mucous membrane, which caused the death of the patient by obstructing the upper end of the aluminum rings so completely that breathing was impossible.

Now, as I have been taken to task for stating that I had removed a bony tumor from the right side of the original opening, which had been made nearly two years ago, I wish to explain why I so stated. I have had many cases where tumors of an ossific nature have followed tracheotomy, from 2 to 5 years after the operation. In one case the obstruction became as large as a turkey's egg, and after sawing it in two, I made a microscopic section which plainly showed it to be composed of ossific particles. I did not make a specimen from the one from the gray horse, but as I was unable to cut it with my knife, I felt assured that it was of a bony nature.

I have often found the rings of the trachea so ossific that it was with great difficulty that the rings were cut with an ordinary bistoury. Why should not these rings become bony the same as the lateral cartilages?

OBSERVATIONS ON COLICS, VOLVULUS AND INTUSSUSCEPTION.*

By J. F. DeVine, D. V. S., Goshen, N. Y.

In presenting this paper for your consideration and discussion, I shall not detain you with the reading of pages of dictum concerning the causes, etc., of volvulus and intussusception, but will make, so to speak, a "case report," confining my paper to personal observations at some fourteen fatal cases.

When we receive a hurried call to a case of colic and arrive upon the scene, we are quite apt to be asked some or all of the following questions by the anxious owner or attendant: "What is the trouble, Doctor?" "What do you think has caused it?" "Do you think he is going to die?"

To the first question we can usually give an intelligent reply, after getting a hurried history and watching the patient carefully for a few minutes. A practical observer can usually tell whether he is in the presence of a case of acute indigestion by the evidence of acute pain, nauseated condition—sometimes

*Presented to the New York State Veterinary Medical Society, at Buffalo, Sept., 1906.

accompanied with regurgitation, etc.—or whether it be flatulent colic, with the dull pain and distended abdomen; but, if we find the patient affected with spasmodic pain of varying intensity our diagnosis should not be too sudden and certain.

It is my custom in treating colics to try and remain with them until they are dead, very much better, or at least long enough to be able to make a fairly accurate diagnosis and prognosis. In the meantime we can explain to our anxious client that his animal is suffering from some acute intestinal trouble and that a definite prognosis is impossible until we have had time enough to see how the case will respond to treatment.

To get to the point, let us for a minute imagine ourselves in the stall with a horse suffering with volvulus—let it be due either to a twist of the bowels upon themselves or to a hernia of a portion of the intestines through the omentum—the symptoms are the same as those exhibited in invagination, excepting that in the former they are more intensified and death will ensue earlier. The symptoms presented upon our first observation will depend greatly upon how long the animal has been suffering. We will presume that the attendant tells us that the animal was taken some thirty minutes ago with sudden colicky pains, occasional straining, accompanied with small passages of fæcal matter, lying down, jumping up, and when down endeavors persistently to roll on his back. You immediately administer your favorite colic remedy—we will say chloral, cannabis, morphia, or what you will—and get what appears to be a pretty fair result. The animal becomes quiet and remains so for a few minutes, but his quietness soon gives way to uneasiness again; you repeat your medication, but this time the action of your drug is not so well marked—the animal continues to grow worse—all symptoms are aggravated; he will lie on his back for a few moments, jump up, walk hurriedly around his stall a few times, then stop, back up in the corner, swing his head up and down a few times and then repeat his march of pain.

From now on your treatment is only pretentious—oil, enemas, anodynes and antispasmodics are indicated, and it is well to give them, even though we think the case fatal—it will aid to retain the good graces of our client. The animal's pulse now becomes very hard and fast, the temperature begins to rise—from two to five degrees; we also note that there is less and less inclination to lie down, but will instead walk blindly around and around in the stall, knocking his head against each corner of the stall until it is painfully abraided. The abdomen is

tucked up, the countenance drawn and the respirations short and painful. We will also notice at this time a characteristic which is quite constant, and that is an occasional neigh at familiar sounds, such as footsteps, opening or closing a door, or the moving of his mate. Should you now through a humane act remove him to a roomy paddock, he will trot about, neighing occasionally, stopping now and then for a few seconds, swaying as though he would fall, suddenly starting off again, when finally from extreme pain and exhaustion he is compelled to go down; however, it is not uncommon to see them regain their feet and continue their insane perambulation after many falls, each one appearing to be the last.

To see all this has consumed at least three or four hours of our time, but you can now make your diagnosis—which you have been predicting all along—and can feel pretty safe in telling your client that death will result in from twelve to twenty-four hours.

It is always well, when practical, to hold a post-mortem, not only for your own satisfaction, but to demonstrate conclusively to your client that the condition was beyond any human aid.

The post-mortem appearances differ with the amount of tissue involved and the duration of the attack. The strangulated portion of the bowel will vary from a dark red to a decided black color.

I have made no reference to the differential diagnosis with other ailments whose symptoms are somewhat analagous, having simply enumerated those which are most common in this particular form of bowel trouble. Should this paper elicit any discussion, the similarity and dissimilarity of other abdominal pain, I think, could be made clearer thereby.

"READER," Chicago, Ill., is referred to Harger's translation of Goubaux-Barrier's "External Form of the Horse," page 333, for a description of the "pincard" or "rampin" foot. We will say, however, that the terms are synonymous, the difference being rather in degree of elevation of the heel, than causation or lesion.—(R. R. B.)

THE GREAT TROTTING SIRE "AXWORTHY," owned by John H. Shults, New York, was sold by the Fasig-Tipton Co., at the recent Old Glory sale for $21,000. Mr. Shults intends to replace him in the stud by his fast four-year-old son "Guy Axworthy," 2:08¾, who is untried as a progenitor. The bold experiment will be watched with interest.

SURGICAL ITEMS.

By Drs. Louis A. and Edward Merillat, Chicago, Ill.

A WORD ABOUT OVARIECTOMY IN MARES.

This operation, performed in solipeds for the single purpose of palliating a series of symptoms often described under the name of *nymphomania*, has been the object of more or less discussion among veterinarians for a number of years. Wherever the subject is discussed the operation always provokes both *pro* and *con* arguments. Some defend it and some condemn it. It seems, however, that during late years there has been a slow but constant increase in the number of veterinary practitioners who have found it a fairly satisfactory procedure, a procedure they can honestly recommend to their clients. The operation, so far as the results are concerned, seems to be one requiring a more or less careful selection of subjects to be operated upon, as well as a good understanding of when a cessation of the unfavorable symptoms may be reasonably expected. If the subject is old and the habit of kicking, switching the tail, and micturating, is a confirmed one, a prompt amelioration need not be expected. Months or even a year or more may pass before the habit is finally abandoned. If, on the other hand, the mare is young and has only recently manifested the condition, several weeks after the period of convalescence may find the subject markedly improved, although probably not entirely cured. If it were generally known that ovariectomy in mares does not immediately terminate the phenomena for which it is performed, there would be fewer disappointments. This class of patient, especially in cities, is generally the property of a certain class of horse dealers or adventurous owners who hold them for speculation, and who as a consequence desire a prompt and inexpensive treatment. Operated subjects when returned to such owners after the usual period of convalescence in the hospital, are found to show no improvement whatever when first hitched up. Often, in fact, they are worse. The period of idleness and good care in the hospital may have so improved their spirits as to actually make them much worse than before the operation was performed. The improvement in their general health and the rest sometimes is found to have transformed them into perfectly useless animals when attempt is first made to hitch them. Very often such animals, before the operation, were more or less

useful, because of a diminished vitality caused by the hard work and the poor care to which they were submitted. There is generally little sympathy for a kicking mare. She receives little stable care and often only a limited amount of bad feed, in addition to a full quota of hard work, which is found necessary to keep her within the pale of usefulness.

It was only after a number of years that we found it advisable to recommend the operation from our own observation of the results. At first we condemned it because we were repeatedly reminded by our clients that the results were absolutely unsatisfactory. Slowly, however, the ultimate, the real results were revealed to us by the discovery of our patients, months and even several years after, in the hands of the second or third owners, who, not knowing that an operation had been performed, often boasted of their ability to pacify a heretofore hopeless kicker.

All things considered, it is very evident that the operation of ovariectomy for the cure of kicking mares, deserves a permanent place among our useful surgical procedures.

AN ILLUSTRATIVE CASE.

The following case report is a fair sample of the usual outcome of the operation in old, confirmed cases :

History.—The mare was nine years old when she first came under our observation. She was purchased by a cabman, who was unable to give any information about her previous life. This was in the fall of 1901. When first hitched up by the new owner symptoms of nymphomania were observed, and they continued to accentuate until she became quite dangerous to drive in the street cab, without the protection of a substantial kicking strap. And even with this safeguard there were periods during which she was positively unbearable through the almost constant attempts to demolish everything behind her. Certainly she was unfitted for the service of a public cab, but being an unusually fine specimen of a cab-mare and having shown exceptional powers of endurance the cabman was slow to give her up, especially on account of the fact that at certain short intervals she became fairly manageable. After a few months it was discovered that very hard work, and especially long hours of work in the cab made her quite complacent. Under these circumstances she became too fatigued to offer forcible resentment. It was said, and I have no reasons to doubt the truth of the statement, that at one time she was kept continuously in the harness without being unhitched for two weeks, working

against two drivers, a day shift and a night shift, and without receiving any feed except from the nose-bag, in the street. The lowered vitality proceeding from such barbarous treatment increased her value to that of two horses. She could be worked, and, more, she accomplished as much as two horses without putting the owner to the expense of much stable care.

During this time a trivial injury to one foot necessitated a "lay up" of three days. Upon being hitched after this brief interval of rest she was found to have revived sufficiently to demolish the front end of a coupé and to drench the driver with repeated squirts of urine, manifesting all of the symptoms of the old habit. This lively career continued for several years, during which time she made history at very frequent intervals.

During the early spring of 1905, she was sold at a public auction, and fell into the hands of an unsuspecting owner, who soon became the victim of her energies, to the extent of two wrecked broughams, before learning the history of her refractory habits. During the following two or three months she was allowed to remain idle on good feed and good care with the purpose of disposing of her to the best advantage. After passing through the hands of several owners, none of whom ever hitched her more than once, she was purchased by the writer for experimental purposes, especially for the purpose of gaining the benefit of a close observation of the results of the operation so highly recommended as a cure for such animals.

The beginning of our experiment is dated July 1, 1905. The mare at this time was about thirteen years old, sixteen hands high, dark brown, of good conformation, fairly sound in the legs, and in fair condition of flesh. The flesh she carried, however, did not correspond to the good feed, good care and idleness with which she had been favored during the previous two or three months. A perfectly healthy mare would have done better. Her general appearance, although fairly good, showed some evidence of unthriftiness. In the stable she was not very dangerous to attendants, although at times she would kick out with one leg at passing persons, and very often at horses standing in the adjacent stalls, micturating considerable quantities of urine at each seizure. Hitched in the breaking cart she would make desperate attempts to kick at very frequent intervals, but between these intervals she always proved her worth as a high class driver, taking the lines at moderate tension and striking a sensible road gait. There was never any attempt to run off or to pull heavily on the reins. The seizures

of kicking, micturating and switching were, however, very annoying, lasting two to three minutes or longer. It was found that a good sharp jerk of the lines and a good lash of the whip often brought her to her senses for several miles.

It was decided to give her several days of long exhausting drives of twenty miles distance and at the same time treat her as gently as the circumstances would permit. These drives promptly lengthened the intervals between the kicking spells, and so materially diminished their force, that it was thought safe to hitch her into a business buggy, under the safeguard of a kicking strap. This step proved somewhat hazardous, as the seizures recurred with uncomfortable frequency, until her vigor was greatly reduced by exceptionally hard work. She was required to do the work of two and sometimes three horses, which she did with ease, showing no other effect than the loss of flesh. This hard work was continued during July and August. At the end of the latter month she seemed to be cured and was driven without the strap or high check rein. This cessation of the seizures was evidently due to the long exhausting drives during the hot weather that prevailed. During September, while the driver was enjoying a week's vacation, a few days of less arduous work by other drivers, who were none too willing to drive her, brought a recurrence of the trouble in all of its miserable and annoying features. Towards the first of October she became positively unbearable, useless, dangerous, and in fact would hardly have been considered a fit subject for any sane human being to drive.

At this stage of the experiment, it was plainly evident, from our own personal observations, that she was incurable by any kind of handling. Surely she had been thoroughly tested. Surely she was a confirmed case. Her previous history and our summer's personal experience proved that the confirmedness of the state was real, and that the subject was above all an exceptional one for making post-operative observations.

She was operated upon October 15, 1905, according to the technique recommended by Prof. W. L. Williams. The preparation for operation, the operation itself, and the convalescence were without any noteworthy event. The operation gave no manifest discomfort. The convalescence passed without anorexia fever, or loss of flesh. In fact, she actually gained flesh during her sojourn in the hospital ward.

The ovaries were interesting to behold. The right one was the size and shape of a medium-sized potato, undulated through-

out its entire surface much like the kidney of an ox, or like a bag of marbles of different sizes with the bag drawn tightly over them. The capsule was gray, glistening, hard, and more than a millimetre in thickness. The whole organ on section proved to be a mass of cysts, not only upon the surface but also throughout the entire parenchyma. The cysts, more than a hundred in number, varied from the size of a pea to that of a large marble, and the tissue separating them was sclerotic and rather spare in quantity. The left ovary presented the same general appearance, but was somewhat smaller in size, being only slightly larger than a normal ovary.

During the first week of November (1905) she was hitched for the first time after the operation, and, sure enough, precisely as our clients had always reported, "she is just as bad as ever." The only difference in this case was that she was much worse than we had ever seen her before.

Let us digress from our anecdote at this point to remind the reader that it is here that judgment is generally passed upon the operation by our clients. It is here that unfavorable judgment is passed by the client and the practitioner, both of whom may have expected at least some degree of amelioration. It is, furthermore, at this point that the disgusted client disposes of the mare to a new owner, who in turn passes her along the line until all trace of the miserable wretch is lost.

It now required a number of days of hard, constant driving to make her useful, precisely as had been the case before the operation had been performed. Gradually, however, it was noticed that the micturation was no longer an important feature of the seizures. The tail would switch and the attempts to kick were still in evidence, but the micturation was wanting or only slight. This was the first one of the chain of symptoms to cease. From about six weeks after the operation (January, 1906,) until the present day (November, 1906,) there has been no recurrence of this feature, which disappearance was slow and gradual. Between January and July, 1906, the inclination to kick and to switch the tail remained much the same; hard work diminished the seizures and rest caused them to return, very much as before, but during July, August and September they became less frequent and finally discontinued entirely. To-day, thirteen months after the operation, she is a perfectly safe driver, in good general health, with scarcely a vestige of the old troublesome symptoms remaining. Only at very rare intervals the old habit reappears in the form of a harmless and feeble switching of the tail.

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

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

Stifle-Joint Lameness [*J. Pato, M. R. C. V. S.*,] and Injury to the Flexor Metatarsi [*G. H. Williams, M. R. C. V. S.*].—Under these two headings these authors describe cases of injury to the flexor metatarsi muscle. The first had become lame owing to a slip while at work. The symptoms were: tremor of the quarter muscles and slight relaxation of the tendo-Achilles, whilst at rest or standing. On walking, the leg was carried straight, and whilst elevated dangled, conveying the impression that there was a fracture, the heel of the foot always touching the ground first. On manipulating the leg, the seat of the lameness could not be made out, but when the leg was flexed and the foot held, as it were, in position of being shod, the tendo-Achilles fell into a distinct fold, which caused suspicion that the flexor metatarsi was ruptured, although there was no sign of pain, heat or swelling on the anterior face of the leg. Not improving after three weeks of treatment, the horse was killed, and on looking for lesion it was found that there was a large bony deposit on the condyles of the femur, completely obliterating the groove and cavity from which the flexor metatarsi and the extensor pedis take their origin. . . . . In the second case, the cause was the same—a slip. The horse was very lame, in great pain, and moved with difficulty. The leg was raised with a jerk and seemed to hang from the hock without control. The tendo-Achilles was flaccid and the leg could be flexed easily by a slight pressure on the os calcis. The muscles in front of the thigh were hard, tense, and painful. The horse could stand on the injured leg and rest the other. The peculiar movement of the leg was only seen when an attempt was made to raise the leg. The horse was old, was put in slings, where he remained for one month, after which he showed improvement. After three weeks' grazing he had recovered.—(*Veterinary Record, Aug. 11, 1906.*)

A Long Deferred Brain Injury [*W. S. Mulvey, F. R. C. V. S.*].—This is the history of a horse which was brought to the author and presented the following symptoms: he moved

slowly, stopping every few yards, respiration accelerated, head carried low down, fore feet held wide apart—something like a horse that has laminitis. The neck was stiff, and attempts to raise the head gave rise to violent spasms of all the muscles. At that moment the horse gave a peculiar grunt as if in pain. The animal received a purgative dose and stimulant medicines, but died the next day. On removing the head about a pint of thin bloody pus escaped. Some two or three ounces of the same fluid was found in the cranial cavity. There was a deep pit on the frontal bone, which had been caused some years before by the horse running into a tree. This had apparently healed and the horse had shown no bad effect from it. Cutting through this depression, a collection of pus was exposed, surrounded by a bony canal, which ran to the cribriform plate of the ethmoid bone and penetrated into the cranium. All along this canal the bone was diseased.—(*Veterinary Record, August, 1906.*)

Fracture Through the Acetabulum [*Prof. A. Gofton, M. R. C. V. S.*].—It seems that this horse in going up hill one day slipped or made a false step and became at once very lame. He was put in a box stall loose, and remained there for six months, when he was turned back to work. This he was able to do showing only a little stringhalt action, but trotting quite sound. In that condition he worked for eight years. After his death, which occurred some way or another, the leg was examined and presented rather interesting lesions. There had been at the cotyloid cavity a comminuted fracture—say, four pieces. Between these fragments bony union had taken place in one or two places, but with these exceptions the whole remained consolidated only by ligamentous bands. There must have been but slight displacement of the pieces of bone, and yet there was some enlargement around the cotyloid cavity. To all appearances, the head of the femur had also been displaced some, as there was in the acetabulum a little depression just as if made to receive the head of the femur. Another point of interest was a depression on the gluteal surface of the ileum in a position corresponding to the sacro-iliac articulation. Without doubt the most interesting part of the case is the length of time the animal did work, and that in a comparatively sound condition. —(*Veterinary Record, August, 1906.*)

An Interesting Case of Emphysema in a Dog [*Fred. Hobday, F. R. C. V. S.*].—A five-year-old fox terrier had a quarrel with another and got the worst of it, getting out of the

fight with a wound on the throat. It is true that the wound is only a slight abrasion of the skin, but it nevertheless allows the entrance of air under the skin and the throat; the head and the shoulders are the seat of a crepitating swelling, which leaves no doubt as to its nature. Soon the whole anterior quarter is involved, and the eyes are partly closed. The skin is punctured in several places and the air is squeezed out by gentle pressure. In the middle of the night the animal is very low. Swollen like a balloon, he is dying with asphyxia. Rapidly about a dozen punctures are made on the shoulders, the throat, the thighs, and the air is removed by pressure as thoroughly as one can. Artificial respiration is resorted to. After a short while, the dog seems better. During the following day it was necessary to squeeze the air out three or four times. In the evening, the dog took his meal—was out of danger. The pressing out of the air from the cellular tissue had to be kept up once a day at least, for several days after. Recovery was not complete before ten days.—(*Veterinary Journal*, *August*, *1906.*)

Division of the Flexor Perforatus Tendon [*V. S.*].—While engaged in night cab work, this animal fell into an area and injured himself. At the back of the off hind leg, about on a level with the head of the metatarsal bone, there was a wound measuring about two inches and deep enough to reach the tendon of the flexor pedis perforatus, and which was severed. Two inches of the upper end of the tendon protruded through the wound, but the lower end could not be felt. The wound was well cleaned, the protruding tendon returned in place and the cutaneous wound stitched, hoping that perhaps union might follow; the dressing being supported by firm bandages from the hock down. All went well for a few days, after which the stitches gave away, the wound gaped open, and the upper end of the injured tendon protruded some two inches. There were little hopes of the tendon taking attachment, as the horse constantly moved and flexed his leg in such a way that the foot touched the belly each time. With a bistoury the whole of the protruding tendon was amputated, and the wound being smoothed over by cutting away too prominent granulations, the parts were dressed with a simple astringent powder of equal parts of alum and sulphate of copper with four parts of boracic acid. A very thick scab was formed, and after a week the animal was turned out. After two months it had entirely recovered. However, she does not use that leg as freely as she does the other.—(*Veterinary Record*, *September*, *1906.*)

STRANGULATED INGUINAL HERNIA IN A BITCH [*Prof. Harold Woodruff, M. R. C. V. S.*].—A black-and-tan bitch had a swelling in the left groin, evidently a hernia. After a few days she grew worse, being very sick and showing pain. The tumor became tense, the animal almost comatous. Reduction not being possible, it was decided to operate at once. She was chloroformed and the seat of the trouble thoroughly disinfected. The skin, fascia and peritoneum being divided, the sac was exposed and incised, but instead of finding the intestine in it, as was expected, it was the whole of the left and part of the right horn of the uterus that were in the hernial sac. Those were dark in color and partly distended with gas. The uterus was gently pulled out of the abdomen, and, ligatures being applied upon it, so as to allow amputation, this organ was removed in its entirety. The stumps were returned into the abdominal cavity, the wound properly closed with sutures and a dressing applied. Recovery took place without further difficulty. On opening the uterine horns some amount of gas escaped and a good deal of coagulated blood was found, whilst the vessels of the suspending peritoneum were filled with dark, partially clotted blood.—*(Veterinary Journal, September, 1906.)*

CREMATION OF AN ANTHRAX CARCASS [*Henry Taylor, F. R. C. V. S.*].—A bullock having died with anthrax, was cremated. A few particulars of the case may prove of interest to some. A hole large enough to receive the body of the animal was dug, three feet and six inches deep, with four nine-inch holes opening below the level of the floor, thus making the type of furnace recommended by the Board of Agriculture. In this instance only three holes were found necessary. The cost was as follows: Digging, £0.12.0; cord of wood, £0.8.0; ton of coal, £0.12.0; gallon of paraffin, £0.1.0; total, £1.13.0. The fire was lighted at noon, and in six hours after only a few bones were left, and the turf on which the cadaver had lain had also been consumed. Practically speaking, the carcass was consumed in six hours.—*(Veterinary Journal, September, 1906.)*

TETANUS CAUSED BY A THORN—DEATH [*Henry Taylor, F. R. C. V. S.*].—The interest of this case lies in the fact of the cause of the apparition of the disease which was overlooked. The animal showed some peculiar symptoms, which the author recognized as those of lockjaw, and from which, notwithstanding most appropriate treatment, he died after a few days of illness. There had been no history about the ailment except that the groom had found a large thorn embedded in the outside

quarter of the near hind foot, some ten days before. This thorn had entered the soft horn just below the coronary band and penetrated in a downward and inward direction. It was firmly held and could not be extracted with the fingers, the blacksmith being obliged to use nippers to remove it. The wound was considered scarcely as the cause of the trouble and the case classified as one of idiopathic nature. However, after death, the thorn was the object of examination, which resulted in the report that it was put into peptone broth and heated to 80° C. for ten minutes in order to destroy any non-sporing bacteria which might be present. After incubation, a small quantity of the broth was injected subcutaneously into a mouse, which died within 40 hours with typical tetanus. The thorn was unusually large and measured quite an inch and a quarter in length.—(*Veterinary Journal, September 22, 1906.*)

A CASE OF SPIRILLOSIS IN THE HORSE [*R. J. Stordy, M. R. C. V. S.*].—An Abyssinian pony is dull, with hanging head, large swellings over the orbits and acute œdema of the neck; temperature 97° F. in the morning, 99° F. in the evening. The case is diagnosticated as one of "dik-kop" form of horse sickness of Africa. The next day the swelling has gone from the orbits and has gathered between the fore legs, extending backwards towards the sheath. Animal very dull and weak, eating and drinking little. Temperature has dropped to 95° F. and rises in the evening to 98° F. Microscopical examination of the blood is negative. After two days there is rapid emaciation, the swellings remain the same and temperature is 99° F. Negative results on examination of the blood. The following day thermometer drops to 95° F. and rises again to 98°. Animal nibbles a little. Smears from the blood and from the swellings, after staining, show ten or twelve spirilla resembling the spirillum or *Spirochœte obermeieri.* Inoculation to a dog gives negative results. After two days more of sickness, the horse dies very much emaciated. *Post-mortem*: Carcass emaciated, very little rigor mortis. Under the anus and between the hind legs were several *Rhipicephalus pulchellus* ticks, a very common variety in that district. Around the anus were a few *Rhipicephalus evertsi*, also very common. Muscular tissue had a parboiled appearance; the swellings contained straw colored exudation. On opening the chest a large clot of blood, somewhat splenic in shape, laid on the surface of the right lung. On removing this clot, the pleura was found to be ruptured and a large infarction occupying nearly the whole lobe was exposed. Left lung nor-

mal. Stomach contained a few bots. Spleen, liver and bowels normal. Kidneys rather large, pale and weighing 56 ounces each. Bladder contained pale urine. Smears from all the organs taken and examined did not exhibit any organisms in them. In five days the horse had been reduced to a mere bag of bones.—(*Journal of Comparative Pathology and Therapeutics, September, 1906.*)

GERMAN REVIEW.

By J. P. O'Leary, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

Reports from the 8th International Veterinary Congress at Budapest, 1905—*Toxic Substances Secreted by Animal Parasites* [*Dr. Linstow, Göttingen*].—There are many helminths capable of secreting a substance or toxin considered as poisonous; others also, by way of exception, or when they live in large numbers in a host, and still others, particularly when their bodies are injured, so that the poisonous fluids contained within them can escape. This toxin (leucomain or ptomaine) destroys the red blood corpuscles and reduces the hæmaglobin, resulting in an anæmia with poikilocytosis. This blood poison is destructive to the albumins of the tissues; it is also a protoplasmic poison with consequent fatty degeneration of the heart, liver, kidneys, muscles, and swelling of the spleen. Fever may be induced through this toxic blood, as is observed when the body is infested with *Trichinæ spiralis*, but its occurrence is rarer when *Ascaris lumbricoides* and *Tricocephalus dispar* are present. We also observe fatty degeneration and other lesions of the heart, liver, spleen, kidneys, especially when the body is infested with *Trichinæ spiralis*, *Ankylostomum* and *Bothriocephalus*. The central nervous system is frequently affected through the circulation of this toxic blood, producing symptoms of general weakness, mental depression, dizziness, fainting, epilepsy, disturbance of vision, buzzing in the ears, mental diseases, pain in the legs, retention of urine, cardiac weakness, paralysis, muscular tremors, muscular contractions, also a cutaneous rash, which is probably due to a local vaso motor paralysis. Death is the usual termination in these cases. Further, the author discusses what is known concerning the poisonous properties of the bodies of numerous parasites (ascaris, ankylostomum, strongylus, tricocephalus, echinorynchus dracunculus filaria,

trichina, bilharzia, bothriocephalus, echinococcus, tæmia, and so on.—*(Deutsche Tier. Wochen.)*

AN ABNORMAL PERIOD OF GESTATION IN TWO THOROUGHBRED MARES.—(1) "Hyères," the mother of the Derby winner and great stallion "Hagen" and other famous running horses, as "Hutab," "Hutschachtel" and "Hans Sachs," gave birth to a stallion foal on March 4, in Frederick William's stud, by the sensational stallion "Ard-Patrick." The mare was barren during the three previous years and this time gestation extended to 368 days. (2) "Unorna," one of the less fortunate thoroughbreds in breeding, also in Frederick William's stud, foaled on March 9, a brown colt by the original Arabian horse "Dziaf-Amir." The mare had been covered repeatedly in January, February, March, 1904. She was successfully served on March 22. On June 4, 1904, the mare showed symptoms of heat plainly while out at pasture, and allowed herself to be covered the same day; she refused the stallion on the 5th inst. In November pregnancy was confirmed by movement of the fœtus. On March 7, 1905, her udder enlarged and she foaled a healthy colt on the 9th. Hence, according to the last date of coition (June 4) the period of gestation occupied only 278 days, so that it can be accepted with certainty, that the mare became pregnant after being covered on March 22, and consequently the duration of pregnancy was at least 352 days. It appears therefore, although it rarely occurs that a mare which already had been pregnant 74 days, once more showed symptoms of heat and took the stallion.—*(Berliner Tier. Wochen.)*

DEDICATION BY THE KING OF ENGLAND.—"Ambush II," the celebrated steeplechase horse owned by King Edward, died recently through hæmorrhage of the lungs, after a galloping exercise. His skeleton is mounted in the Veterinary Anatomical Institute of the Liverpool University. A lasting memorial will be erected to this brave horse, at the place where he achieved his greatest success as victor in the Grand National Steeplechase at Liverpool.—*(Berliner Tier. Wochenschrift.)*

FRENCH REVIEW.

REPORT OF THE TESTS OF PREVENTIVE VACCINATION AGAINST TUBERCULOSIS AT MELUN [*Vallée.*].—In December, 1904, the author performed a number of vaccinations against bovine tuberculosis, at Melun, according to the method of Prof.

von Behring, in Marburg, to ascertain: (1) whether these preventive vaccinations are harmless; for besides involving the agricultural side of the question, it would also mean a threatening danger to man, if through the injection of human tubercle bacilli, he should render those animals tuberculous which yield milk and meat for his nourishment: (2) to test the efficiency of the method; (3) to determine its practical value, and the duration of the immunity conferred by it. On December 5, 1904, Vallée injected tuberculin into 21 calves, 4 to 6 months old, none of which reacted. These were placed in a stable where they were safe from all natural infection. On December 11, the first injection of bovovaccine into the jugular vein was made. Two months later, one of the animals died from the effects of toxic substances of potato-pulp. Its organs, which were examined by Professors Moussu and Vallée, showed nothing from which tuberculosis could have been suspected. The other animals remained perfectly well and showed a normal development. On February 13, the remaining 20 were tuberculinized. The tuberculin injection was not made any sooner, in order to give any possible tuberculous lesions time for development, so that it could not be claimed that the tuberculin had been used for therapeutic purposes. Four animals reacted; but this is not astonishing, because the injected tubercle bacilli could not be absorbed without having previously caused microscopical lesions, which could be discovered only through the tuberculin reaction. Indubitably all would have reacted if they had been tuberculinized within a shorter time after the first vaccination. On March 22, that is, three months after the first vaccination, the animals received the second dose of bovovaccine. Beginning of June all animals were tuberculin-tested. A single one reacted, which was at once eliminated. But this animal did not again react later on upon two tuberculin injections. Four other animals were eliminated, in order to test on them the duration of the immunity. On June 15, the following experiments were carried on with the remaining 15 animals: Six received an injection directly into the vein of 4½ milligrams of a fresh, highly virulent culture of bovine tubercle bacilli; seven received this injection under the skin. Two were put into a stable with cattle showing clinical symptoms of tuberculosis. The same experiment was made with a like number of calves which had not reacted to tuberculin either, in order to use them as controls. *Result of Injection Into the Vein.*—(1) Control animals: Three succumbed within 30 to 40 days after the vaccination, showing

severe pulmonary lesions. The three remaining animals showed extensive generalized tuberculosis upon autopsy. (2) Vaccinated animals: Five remained entirely free from tuberculosis; the sixth, which already at the test vaccination had shown symptoms of "Pasteurellosis" and which consequently was less able to resist infection, showed disseminated tubercles in the bronchial and mediastinal lymphatic glands. But all organs were free from infection. *Result of Subcutaneous Injection.*—(1) Control animals: Three showed severe lesions of the prescapular lymphatic gland at the site of injection. Four of them had besides generalized tuberculosis of the lungs and the bronchial and mediastinal lymphatic glands. (2) Vaccinated animals: In five no lesion whatever was found in the lymphatic glands in the vicinity of site of injection. In one of the animals a tubercle was found in the prescapular lymphatic gland. In the last animal, this gland was tuberculously inflamed. *Result of Natural Infection.*—(1) Control animals: Generalized tuberculosis acquired through the intestinal tract. (2) The vaccinated animals did not react to tuberculin. They were left together with tubercular cattle. *Conclusions.*—(1) Is the preventive vaccination against tuberculosis according to von Behring dangerous, that is, is it possible to infect healthy animals by it? "No" is the reply, on basis of the experiments at Melun, since none of the vaccinated animals have reacted to tuberculin for some time after the vaccination. (2) Is the vaccination efficacious and will the vaccinated animal be protected against a tuberculous infection? It must be borne in mind that in every animal, be it immunized ever so thoroughly against a disease, the immunity can be overcome if the organism is overloaded with germs of the disease. In the experiments at Melun, the calves have been severely tried, since they received at one injection as much as 4½ milligrams of a culture of bovine tubercle bacilli which was sufficiently virulent that a dose of 2 milligrams of it killed a two-months-old calf within 30 to 40 days. In reality such a strong influence is never present. Yet, only a few vaccinated animals were infected, and these showed but slight lesions, as compared with the non-vaccinated animals. Of the six vaccinated animals which had received intravenous injections of tuberculosis virus, five have remained perfectly well, whilst the control animals succumbed to tuberculosis or were severely infected. Besides, all bovovaccinated animals have withstood natural infection (cohabitation with tubercular animals), while all control cattle were infected. The experiments manifest,

that it is indeed possible to create a high degree of resistance against tuberculosis in young cattle. The duration of the immunity will be determined by further observations of the author.—*(Recueil, Dec. 15, 1905.)*

DANISH REVIEW.

By JOHN THOMSEN, Veterinarian, Armstrong, Iowa.

AS TO THE TREATMENT OF MASTITIS [*Bigoteau*].—The changed views of later years as to the character and causes of mammitis have of necessity brought about a reform in the treatment of this disease, and numerous attempts have been made with a view of replacing the older methods of external treatment, such as the use of ointments, liniments, poultices, etc., with agents injected into the gland, thus being enabled to act more directly on the diseased tissues. Experience in the matter, however, was wanting, and the accidents which occurred in this connection soon landed the new method in disrepute. Leblanc was among the first to state that scarcely anything could be expected from a flushing out of the milk sinuses; others concluded that to reach the upper extremities of the milk ducts would be impossible, or that there was considerable danger of injuring the protective epithelial layers of these ducts. Further, a difference of opinion existed in regard to choice of antiseptic agents employed for injections, and from time to time all the different disinfecting solutions were used: boric acid, salicylic acid, corrosive sublimate, carbolic acid, iodine, lysol, etc. It was soon learned, however, that the success in treatment depended but little on choice of the antiseptic agent, but mainly on getting the case in hand early. Nocard and Mollerau called especial attention to this condition and advised the injection of boric acid solution, by which they had obtained favorable results, even in the rather dangerous cases of mastitis caused by streptococci infections. The French veterinarian, Bigoteau, adopted this method, and has had occasion to employ it in 200 cases of all forms of mastitis, among which were numerous cases with attendant high elevation of temperature, symptoms of toxæmia, and even with paralytic complications. The udder is washed carefully with warm soapsuds, later with warm water, and dried well with a clean towel. This to be repeated daily until well. Following the cleansing the affected quarter is

milked out thoroughly, a mild massage applied, and immediately injected with 120 to 150 grams of a 3 per cent. boric acid solution. The solution should be carefully prepared from freshly boiled water, and, if kept for future use, warmed before injection. Within from three to four hours the quarter is emptied of its contents and carefully massaged (stroked), which operation owner may continue two, three or four times daily until parts are normal. In connection with the local treatment a cathartic is administered. The results appear promptly, as even within a day improvement is noticed, the appetite and rumination returning. A slight œdema in the affected quarter is considered a favorable symptom. If the treatment is applied within 24 hours after the attack of the disease, its course is shortened materially. If, however, from one to two days have passed before treatment is commenced, and the entire quarter has become involved in the inflammatory process, it will require another two to four days' time before the milk becomes normal, and the secretion will, during the entire period of lactation, be somewhat diminished. It seldom happens, however, that a portion of the affected quarter remains hardened, nor that, at the next period of lactation, the secretion is not up to normal. A repetition of the boric acid injection ought to take place only when the milk secretion has been considerably diminished or has entirely ceased, which, however, seldom occurs, and even in such cases should three or four days be allowed to pass from time of first injection before a second injection is attempted.—*(Tidskrift for Dyrloger; Revue Générale de Médicine Vétérinaire.)*

A HANDSOME BROCHURE.—The house of Parke, Davis & Co., of Detroit, Mich., has issued an invitation to the individual members of the veterinary profession to visit their "Department of Experimental Medicine," and where this is impracticable they have furnished a very handsome descriptive pamphlet, which is one of the most beautiful specimens of the printing art which we have seen. It contains 15 pages, each page consisting of illustrations of the various subordinate departments and a brief sketch of the work done in them, with views of the buildings in which the departments are located. There can be no doubt that such establishments have been and will continue to confer the greatest benefits upon the medical sciences, since their thorough and ethical efforts place before the profession some of the best results of scientific experimentation.

ARMY VETERINARY DEPARTMENT.

ERADICATION OF GLANDERS BY REPEATED INJECTIONS OF MALLEIN.

PRESIDIO OF SAN FRANCISCO, CAL., Sept. 17, 1906.

The Military Secretary, U. S. Army, War Department, Washington, D. C.:

SIR:—I have the honor to report for the information of the General Staff, the Mounted Service, and the Quartermaster's Department, the successful treatment of generalized incipient glanders amongst the public animals at the Presidio of Monterey, California.

On December 27, 1905, I was ordered to the Presidio of Monterey, to investigate a case of supposed glanders of one of the horses of "H" Troop, 14th Cavalry.

On arriving there I found the horse, that had been isolated for some time, suffering from advanced chronic glanders, and recommended his immediate destruction, which recommendation was carried out by action of a Board of Survey.

I then examined all the horses of the troop to which this one belonged and could find no external symptoms, all showing evidence of perfect health and condition. I gave instructions for the necessary sanitary precautions to be observed, and they were carried out.

On January 18, 1906, I again reported at the Presidio of Monterey to investigate another case of supposed glanders in the same troop. This time I found a case of acute glanders, the same action being taken as with former animal. I then, that night, applied the mallein test to all the horses in that troop; next morning finding characteristic reactions, some very strongly marked, as exhibited in accompanying mallein test temperature charts, marked "H".*

The very marked cases I had closely isolated in an improvised shed in the woods nearby; the other marked cases were isolated in one of the stable sheds, separated from the other animals. As but an open board partition separated this troop from the adjoining one "G", and "G" from "F", and "F" from "E" troop, and the corrals of each being separated but by low, barred fences, I deemed it necessary to apply mallein test also, to "G" troop at least.

* The report was accompanied by full temperature charts of the mallein tests, too extended for reproduction here.—EDITOR REVIEW

On January 29th, after having examined the horses of "G" troop, and finding no external symptoms, all being in excellent health and condition, I applied the mallein test, finding generalized characteristic reactions, many very positively marked, *vide* chart marked "G".

On January 30, 1906, I applied the mallein test to "F" troop, whose stable adjoins that of "G", and again found generalized glanders, not so marked, however, as that of either "G" or "H" troops but showing, nevertheless, the same characteristic symptoms, *vide* chart marked "F".

"E" troop, adjoining "F" troop stables, was next tested by me, and while showing generalized characteristic indications, was not so marked as those of the preceding troops, *vide* chart marked "E".

Having tested the different troops on different dates, and finding glanders generalized in its incipient form, I deemed it expedient, for precautionary reasons, to test the mules of the Quartermaster's Department, though their stables were far removed from the original point of infection.

Two of them I found with positive characteristic reactions, *vide* chart marked "Q. M. D." On investigation I found those to be two leaders which worked on the rifle range, near where the cadavers were, before incineration, and where they probably received the infection. Two others showed reactions not so marked, one being stabled next to the two leaders.

It will be noticed on chart that the disease was very stubborn in the two leaders mentioned, and that by the interruption of treatment (by reason of the earthquake and fire of April 18th to 20th, preventing my going to the Presidio of Monterey at that time to apply the treatment), the disease again became marked.

Considering the immense loss to which the Government would be subjected by the destruction of these animals, I determined to use mallein as a treatment by its periodic injection, having had experience of its success some years since, to which I will refer hereafter. Before doing so, however, with permission of the authorities, I called in consultation the most eminent veterinary expert in San Francisco, Dr. Wm. F. Egan, M. R. C. V. S., who examined all the troop horses, as well as one of the cadavers recently destroyed for acute and cutaneous glanders. He agreed with me and approved of my intended action.

I then injected 1 c.c. of mallein into each animal at intervals of ten to fourteen days, until all ceased to react, both thermally and locally, when they were returned to duty. Before the

second injection of mallein was given, the isolated horses of "H" troop, I discovered that one had acute and cutaneous glanders (No. 39), and later another developed acute glanders (No. 35). Both horses were destroyed on February 3d and 5th respectively.

At about the same time, No. 21, of the same troop "H," showed indications of chronic glanders (indurated intermaxillary glands, slight nasal discharge, and small characteristic ulcer on schneiderian membrane). This animal, however, recovered, but the treatment was more protracted than most of the others.

In the early 90's, or soon after mallein was introduced, at the request of the Department of the Interior for an experienced army veterinarian to assist one from the Bureau of Animal Industry to investigate disputed glanders on the Cheyenne River, Indian Reservation, S. D., involving a large pecuniary consideration to the Department, I had the honor to be selected by the War Department. A Frenchman, who had married into the tribe (Sioux), was a horse raiser and possessed a large herd, some valuable ones, on this reservation. The state authorities, as well, I believe, as the Indian Agency authorities, commenced to, and did destroy a number of this man's horses for supposed glanders, which destruction was stopped by senatorial influence until further investigation by his veterinarians, and a claim made by him for the number so destroyed. When the Bureau's representative (Dr. Tracy) and myself arrived on the Reservation, we had all the suspected herd rounded up, and while most of those animals had been condemned, and some of them shot, though not fatally, we found no symptoms of glanders, even though we applied the mallein test. A few work horses that were stabled, and showing no external lesions, were the only ones that showed reaction. Glanders was, however, apparent in an Indian stallion and some colts, though not connected with this herd. We, therefore, made a very strong report in favor of claimant.

Months after this, in studying the matter over calmly and deliberately, I personally came to the conclusion that glanders did exist to the enormous extent claimed by the state authorities, but that by the periodic testing of the herd with mallein by veterinarians preceding us, it unknowingly acted as a curative agent.

In the first place the State Veterinarian, a man of professional reputation and honesty, found glanders, as he claimed, both from external lesions as well as reactions from the mallein

test. He was succeeded, perhaps a month later, by another veterinarian, who also applied the mallein test, corroborating the State Veterinarian's diagnosis. At a still later period, a representative of Dr. Baker, veterinarian, of Chicago, employed by the claimant, also tested the animals with mallein, and, while not denying glanders, did not corroborate the diagnosis of his predecessors. Still later, or within a period of a month, Dr. M. J. Tracy, veterinarian, U. S. Army, was called in by claimant. He, also, applied the mallein test, and, I believe, denied the existence of glanders, though he personally told me, a long time after our report had been submitted, that glanders in a modified degree had existed in some of the animals he had tested.

Taking into consideration the reputations of my different predecessors, and the periodic injections of mallein by them into this originally infected herd, and their immunity from the disease at our investigation, I had come to the undoubted conclusion, and asserted so, though scoffed at by some of my colleagues, that mallein was a curative agent for glanders when not acute or too far advanced. This case now submitted of generalized incipient glanders amongst the public animals at the Presidio of Monterey, is the first opportunity I have had of proving my assertions.

From all of these deductions, from extensive experience and observation, I have no hesitation in strongly recommending that all our public animals be injected annually or semi-annually with mallein, especially in the tropics, or where glanders is suspected to exist—not only as a detector, but as an immunizer, as well as a treatment for the disease when reactions are discovered. The intervals between injections should be not less than ten days, as I found in many of the cases quoted local reactions existing for fully one week after inoculation.

Having been almost uninterruptedly alone for a period of now nearly five years, in charge of the veterinary interests of this entire Department, my duties to the command of the District of the Presidio of San Francisco comprising a Battalion of Field Artillery, Squadron of Cavalry and the numerous Q. M. and private animals, present and in transit, as well as public and private animals at Forts Miley, Mason, Baker, Point Bonita, McDowell, Discharge Camp and at Alcatraz Island, I regret exceedingly that on account of these many duties, I was not able to give continuous observation and study to these cases at the Presidio of Monterey, being able to visit this place only bi-monthly and then for a period of not more than three days.

I wish to express my indebtedness to Dr. Melvin, Chief of the Bureau of Animal Industry, for his courtesy, promptness and generosity in supplying the mallein used in the treatment of those horses.

I desire also to thank the Squadron and Troop Commanders, Colonel Garrard, Captains Adams, Smith, Walker and Smedberg, for the interest taken and the assistance given me, and whose corroborative indorsements, I trust, will be given this document.

Lieutenant F. R. Curtis, to whose assistance I am indebted for compiling this report, will always have my deepest gratitude.

Trusting this action of mine, with my earlier efforts, will be accepted as in the interests of the service, and as a palliation of the increasing infirmities of age and long service, I have the honor to be, Very respectfully, RICHARD B. CORCORAN,

Veterinarian, A. C.

* * *

ARMY VETERINARIANS STUDYING TROPICAL DISEASES—THE ARMY BILL.

FORT SAM HOUSTON, TEXAS, November 19, 1906.

Editors American Veterinary Review:

DEAR SIRS:—The second number of the *Army and Navy Register* for November contains an order sending Veterinarian Walter Fraser, of the 13th Cavalry, to the Liverpool School of Tropical Diseases. This is the second Army Veterinarian sent to that school, Dr. Nockolds, of the 1st Cavalry, having been ordered there in October. I think Army Veterinarians should take encouragement from this, as it shows that the General Staff are anxious to have the most efficient corps possible and will no doubt do something for us in the near future.

Referring to Dr. Jewell's letter in the last REVIEW regarding Army legislation, I will say that the bill presented by the General Staff does not appeal to me. First, it does not give us enough; second, the examination clause is very unfair; third, it does not provide for those who are now in the service and may fail to pass the physical examination. However, if it is a fact, as Dr. Jewell says it is, that the General Staff will block any attempt on our part to procure a better bill or a commission, then for the good of the long-service members, I say let it pass; but I do not approve of giving it any aid whatever, as that would be evidence of our satisfaction with the bill.

Sincerely yours, WALTER R. PICK,

Veterinarian 1st Cavalry.

CORRESPONDENCE.

A WORD OF EXPLANATION ABOUT TALLIANINE.

NEW YORK CITY, December 12, 1906.

Editors American Veterinary Review:

DEAR SIRS:—Many of our friends have claimed that Tallianine was not uniform in character and properties, basing such statements upon the treatment of parallel cases or cases similar in character where good results were obtained with some and negative results with others. Such reports as these, many of which were made by staunch supporters of Tallianine, led us again to undertake an exhaustive study of the product in an endeavor to improve its efficacy and increase its field of usefulness. In making this study, we have given careful attention to the thousands of charts and records, most of which have been sent to us unsolicited, received from members of the profession, and also to the conditions to which Tallianine must necessarily be subjected after it leaves our laboratories in France.

It has only to be stated to be admitted that with the style of compounds in which Tallianine may be properly grouped their introduction is more or less experimental in character. That there *was* deterioration in our old product due to conditions which we could not control was apparent; and although the reasons were not, at first, understood, we naturally endeavored to find a remedy.

As originally manufactured, Tallianine contained 2½ volumes of ozone per cubic centimetre of liquid, and this was afterwards increased to 4 volumes, which remained the standard until July, 1906.

Due to reports above mentioned, we commenced early in 1905 to return to our laboratories for examination, sample tubes from each shipment received, and also from packages which had been in store here for varying periods. Much to our surprise we found in some cases the ozone content had become greatly impoverished and in others had disappeared entirely. This, in spite of the fact that every precaution had always been observed to provide the very best type or style of package or container obtainable.

Of course, these tubes had made two trips across the Atlantic, with the inevitable high temperature of the steamer's hold to contend with; some had been in store in New York and in the hands of veterinarians for from 3 to 12 months; others had

been subjected to conditions of storage, which we have frequently warned against. Even so, the fact remained that the product was not a stable one, and the indications were that high temperature and long storage, or either alone, would impair its efficacy and, in time, destroy it.

In justice to ourselves we must say, though, that veterinarians themselves have often been, unwittingly perhaps, the cause of defects in Tallianine. In one case we visited an office early in the morning and found a box on a steam radiator and were informed by the watchman that it had been there all night. In others we have in summer time seen the packages exposed to the direct rays of the sun, and have often found Tallianine stored in close proximity to stoves, heaters, etc., in the winter. Besides this, many of our orders come through wholesale and retail drug houses, and once in their possession we had no means of telling how long they carried it in stock before delivery.

It was therefore apparent to us that we must endeavor to produce a Tallianine having greater stability or adopt a system which would safeguard the buyer against the use of the product after its active principle had departed.

We have accomplished the one and will shortly inaugurate the other.

Tallianine as now manufactured contains 7 volumes of ozone per unit of liquid, the activity of which can safely be guaranteed for seven months. This is a maximum period at present, but it may be extended as we are still experimenting and hope to increase it. Every box is stamped with the date of its manufacture, and we will accept the return of any unbroken tubes within eight months of this date, replacing them with fresh stock without expense to the buyer other than transportation charges. Later on, when our research work is finished, we shall stamp every tube and container with the date beyond which it must not be used, and within 30 days from that date will accept return of unbroken tubes for replacement. This will apply equally to the veterinarian and to the druggist, so that there will be no excuse on either hand for the use of Tallianine which may have for any reason become impaired. Our date limit will always cover the minimum rather than the maximum period.

The Tallianine of to-day is prepared upon an entirely new and improved process, and with a higher volumetric content of ozone possesses much greater stability. We are continuing the

experimental work in our laboratories and in hospitals in France and hope eventually to reach a point where we can present to the profession a product without reservation of any kind or description.

Over 41,000 tubes have been sold in 1906 (January to September).

We feel that this explanation is due to the profession, as the experimental work lately completed justified the criticisms which have been made of the old product and have really been the cause of production of the new. Without such criticisms this work might not have been attempted, as our sales have steadily increased year after year. We may further state that we shall be prepared to fill all orders promptly in future, so that our disagreeable experience of the spring of 1906, when we were always behind our orders, will not be repeated.

WALTER F. SYKES & CO.

THE "SCREW WORM" FLY IN CUBA.

CAMP COLUMBIA, CUBA, November 30, 1906.

Editors American Veterinary Review:

DEAR SIRS:—In the November number of the REVIEW, just forwarded to me from Vancouver Barracks, Washington, I see, among other things, the following extract from the article by Dr. Wm. H. Dalrymple on "Our Insect Enemies," page 948: * * * * * * "why was it that their habit was so changed, temporarily, as to induce them to attack living tissues? * * * but I do not recall having heard of their attacking the living animals since the years alluded to."

If Dr. Dalrymple would come to Cuba for only a short visit I think I could show him some of the worst cases of infection by the "screw-worm fly" that any one has had the fortune to see, or the misfortune of observing the torture of dumb brutes through their action. According to the natives of Cuba, "screw-worms" are very common here. When we first landed I was warned of their presence and took every means possible against them. About three weeks ago the three batteries of artillery were sent out in various directions for practice marches, and one, which had the longest and most fatiguing march, came back with numerous cases of infection. One in particular had the sheath entirely filled with the larvæ, so much so that when an aqueous solution of creolin was syringed into the mass, I collected over a pint of writhing larvæ. This was and is the best

treatment I have found, using creolin-Pearson, one ounce, and water four ounces.

This surely is a different climate and different country in which to treat animals than in the States, and diseases are a great deal different to what we find in the temperate zone.

ANDREW E. DONOVAN,
Veterinarian A. C., U. S. Army.

OVARIOTOMY FOR KICKING MARES.

MONTEVIDEO, MINN., November 19, 1906.

Editors American Veterinary Review:

DEAR SIRS:—I would like to hear through the REVIEW from some veterinarian who has had experience with ovariotomy of troublesome (kicking, nymphomaniac mares). Does the operation cure the habit? Very respectfully,

T. LAMBRECHTS, V. S.

[See "Surgical Items" in this number of the REVIEW, where Drs. Merillat discuss the subject *in extenso*. Our correspondent employs the older term "ovariotomy," while our collaborators describe the operation as "ovariectomy." The latter is undoubtedly the correct word, since the ovary is not only severed from the fallopian tube, but it is entirely removed from the animal, while if the former was the proper descriptive name the attachment would be severed and the ovary left in place. Medical dictionaries, however, make the words synonymous; thus the "National Medical Dictionary" defines each term to mean "excision of the ovary." Yet the same authority says that "excision" means "the *removal* of a part by a cutting operation."—R. R. B.].

SIX SUPERB SHOW HORSES, owned by Judge Wm. H. Moore, of New York, were killed in a railroad accident last month. "Forest King" and his son "King Forest," were saved by being in the recumbent position when the collision occurred. "Bryony," champion gig-horse, for which the Judge had recently paid $10,000, was among the killed.

FIFTY RABID DOGS ARE KILLED.—*New Haven, Conn., Nov. 17.*—Nearly fifty dogs suffering from rabies have been killed here by the police or veterinary surgeons within a fortnight. A report that $1 a head would be paid for such dogs at the Yale Medical School has led to much annoyance for the officials there by persons who have captured collarless dogs.—*(New York Herald, Nov. 18.)*

BE A VETERINARIAN!

By S. R. HOWARD, V. S., Hillsboro, Ohio.

"Be a Veterinarian;" "We teach you by mail."

"More money is being made in the veterinary *business* now than ever before.

"Are you getting your share of this wealth?

"Are you one of our celebrated veterinarians that own a large and well appointed hospital, have nine motor ambulances, four operating tables and one tack puller for wolf teeth?

"If not, we can teach you by mail how to be a great veterinarian in your own town by working evenings, and your friends.

"The veterinary calling is not now such a nefarious and atrocious affair, but is very spiritual and delightful, and, besides the great skill and enviable importance which you can easily attain in your practice and county, you will have the satisfaction of making a goodly sum of money with very little labor.

"Many of our pupils are making $12,000 to $15,000 per week.

"Quite a number of our graduates are working for the State, and have several more years to work.

"If you do not get a similar position it will not be our fault.

"You see, good locations always await our honorable and expert graduates.

"Our Course is very nominal in cost, and considering what we give you for your money the tuition is very low.

"With every Course of instruction we give absolutely free our large valuable Text Book of Complete Veterinary Education. This Book cost us $50,000 and forty-seven and one-half years of hard labor. This is a true book. It is a great book. It is our book.

"Professor Chauveau and Nocard were our pupils. You *must* have *this* book. Remember! It is absolutely free with the Course we give you.

"Among the vast subjects we treat in our Book may be mentioned as follows: 'The corpuscum of Negri bodies on the Striffin,' 'Trouble with his Water Works,' The use of the Plug Hat in Underfed Colic,' 'The Relation of the Stone-horse to the Nebular Hypothesis,' and 'Function of the Medulla Oblongata in Adominal Digitalis,' etc.

"With every Course of instruction we also give a case of the great and notorious Quack'mbosh's fine dental instruments. Possessing these instruments will of themselves (they are nickel plated) entitle you to the applause and exhalted honor of the whole community.

"Brace up, and make good. Our mission is a happy one for you. We come like the ancient Greeks, bearing gifts. Let us tell you how you can get into a fine business and increase your earning power.

"Remember ! By taking our full Course ($13.25 now in advance) and receiving our 47x21 inch gorgeous Diploma you become not a Horse Doctor but a full-fledged Veterinarian.

"Experience not necessary.

"Be a Veterinarian and bore with a big auger. Write to-day !

"CORRESPONDENCE SCHOOL OF VETERINARY SURGERY.

"Depart. 23. A-Pirate, Blondon, Canada."

A MAN at Albion, N Y., was run into by a baby carriage on the street last week and had three ribs broken. The speed laws for perambulators should be more strictly enforced.

FOR the clinical demonstrations at the 1907 meeting of the New York State Veterinary Medical Society, to be held in New York City in September, the large roof-garden ring of the new Fiss, Doerr and Carroll Horse Company's building in the Bull's Head district has been tendered by General Manager Carroll. Dr. J. Elmer Ryder, the attending surgeon, is one of the committee of arrangements, through whose good offices the splendid facilities thus afforded have been secured. The wonders of this great establishment will be an added incentive for a large attendance from all over the state.

THE second volume of Dr. L. A. Merillat's text-book on "Veterinary Surgery" has just been issued by Alex. Eger, the Chicago veterinary publisher, and is devoted to the "Principles of veterinary surgery, including an authorized translation, enlargement and rearrangement of General Veterinary Surgical Pathology, by Profs. Cadeac, Le Blanc, and Carougeau, of the Veterinary High School, of Lyons, France." A review of this important addition to American veterinary literature will appear in these pages in a short time from the pen of Prof. Liautard. Prof. Merrilat has in this latest effort exhibited another of his numerous talents, that of translation from the classical French. He is as graceful and effective with the pen as with the scalpel.

BIBLIOGRAPHY.

LEISERING'S ATLAS OF THE ANATOMY OF THE HORSE AND OF OTHER DOMESTIC ANIMALS, for Veterinarians, Students of Veterinary Medicine, Agriculturists, Agricultural Colleges, Horse Fanciers and Artists. In 54 partly colored plates, with explanatory Text. Newly edited and arranged by Prof. William Ellenberger, M. D., Ph. D., consulting physician, professor in the Royal Veterinary Academy in Dresden, and Fellow of the Royal Academy of Liberal Arts in Dresden, as well as of the Royal Russian Veterinary Institute in Jurjew, etc. With the assistance of Dr. Baum, of Dresden. Vol. II. Explanatory text translated from the third German Edition by A. T. Peters, D. V. M., Professor of Animal Pathology in the University of Nebraska, and L. B. Sturdevant, A. M., Instructor in General Anatomy and Physiology in the University of Nebraska. Chicago: Alexander Eger, publisher, 1906.

In placing the incomparable Atlas of Leisering before American veterinarians and students Drs. Peters and Sturdevant are deserving of the sincere thanks of the profession, for it is beyond question the greatest work of the kind ever printed in any language. Many teachers of anatomy and surgery have been employing it for many years in the original German, but it was confusing for those unable to read that tongue. Of course, the plates are the same, and to one thoroughly familiar with anatomy much help could be obtained from the illustrations alone; but the full value of the work can only be secured where a true explanatory key is consulted. That this is now placed at the service of English-speaking veterinarians is a subject for rejoicing, for it is at once an authoritative text-book for our colleges and a constant companion for the surgeon who needs to study regional anatomy when about to undertake delicate operations. In this latter relation it will prove of indispensable value, and if once used the surgeon will feel its great loss should he be deprived of it. The plates are elegantly printed and are the same as in the latest German edition; it is only the translation of the explanatory text that is new. Dr. Peters has done so much German translation for the profession that his ability in this line is fully recognized, and we believe the present example is by far his best work in this direction. We have never seen anything from Eger's press which compares with the quality of the work done in this volume, so that altogether it is a grand contribution by all hands to American veterinary literature.

The profession should generously support this enterprise of translators and publisher; they should have every incentive to continue their splendid work, and to feel that the stronger their efforts the greater will be their reward.

Veterinarians will make no mistake in securing Leisering's Atlas. (R. R. B.)

SURGICAL DISEASES AND SURGERY OF THE DOG. With 91 Illustrations. By Cecil French, Doctor of Veterinary Science (McGill). Washington D. C. : Published by the Author. 1906.

The importance which surgery of the small domestic animals is assuming throughout the world is sufficient to explain the almost simultaneous appearance of two volumes upon the subject—one in England, the other at home, each by a recognized surgeon, though in the latter instance the author confines all of his activities to the specialty of canine medicine and surgery, while our English *confrère* is versatile in surgery of all species. Cecil French graduated from McGill and at once devoted himself to the specialty of canine medicine, and has pursued his studies with enthusiasm, being peculiarly well equipped for grasping his subject from all points of contact, being a good scholar in German and French, thus having the literature of these two tongues at his command, and the great opportunities of an extensive practice for his experience. And he has employed his opportunities to their full worth, resulting in his complete preparation to fulfill the important task of producing a work on the surgical treatment of the ailments of dogs which will at once take rank with the best in the literature of the veterinary profession of any country. He has shown extreme modesty, in not, through his extensive bibliography, referring to his own excellent contributions to the subject in the periodicals, although he at one time edited a department devoted to the subject in the *Journal of Comparative Medicine and Veterinary Archives*. After every subject he appends a list of the reference works consulted in drawing conclusions, showing that every statement has received the most careful effort at confirmation.

The only work devoted exclusively to the subject published in this country, it must at once take its place at the head of the works which "include" surgery of the dog.

Dr. French is his own publisher, and he has shown equal good taste in the mechanics of book-making as in the making of contents. We trust that he may find so much encouragement from the reception which attends his first effort, that he may feel like taking up a companion work on general pathology of his specialty. (R. R. B.)

RECORDS of the Fasig-Tipton Company show that 8,778 horses have been disposed of in annual fall sales at an average of $423. Total receipts since 1897 are $7,000,000.

SOCIETY MEETINGS.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The great interest which has been manifest in the proceedings of this association was more than sustained at the December meeting, which occurred on the evening of the 5th in the lecture-room of the New York-American Veterinary College, at which President Bell presided and Secretary Mangan recorded. The attendance was the largest in the history of the organization, the room being completely filled, and there was marked interest in the proceedings and lively discussions of the papers presented. Three states were represented, and there were visitors from various towns on Long Island and New Jersey.

The guest of the evening was Dr. Richard P. Lyman, of Hartford, Conn., Secretary of the A. V. M. A., who presented a very able and thoroughly thought-out paper on "Differentiating the Intestinal Disorders of the Soliped." The points brought out by Dr. Lyman need not be summarized here, as the full text of the paper will be found in the "Original Articles" department of this number of the REVIEW. At its conclusion the chair recognized Dr. Geo. H. Berns, who commended the effort of Dr. Lyman very heartily, believing that it constituted the best practical presentation of the intricate subject which he had ever listened to or read. Many other members and visitors spoke in a similar vein, Dr. E. L. Loblein, of New Brunswick, N. J., saying that he admired very much the essayist's scientific treatment of this difficult subject. The discussion drifted from the title of differentiation to that of treatment, and various speakers gave their methods of procedure. Drs. H. D. Gill and Robert W. Ellis maintained a firm advocacy of intravenous injections of warm solutions of barium chloride, which did not meet with unanimous approval, many declaring that their results had been quite disastrous through local sloughing. Dr. Ellis, who has steadily employed it for years, explained that such a result was impossible if a proper needle was employed, and the solution delivered in the blood current instead of the cellular tissue around the jugular vein. He also believed that the drug should be given with discretion; and in response to Dr. Mangan's inquiry as to whether he would administer it to a patient in a condition bordering on collapse, he replied emphatically in the negative. Dr. Gill did not believe in much

sedative treatment in colics, but thought such stimulants as nux vomica in repeated small doses of great service. This proved a rather popular form of treatment with many members, and it became apparent that Caulton Reeks' doctrine was gaining considerable headway among metropolitan veterinarians. Dr. Lyman is very fond of ammonia, and prefers not to deaden peristalsis too much by heavy dosing with chloral hydrate. He does not use barium chloride, but has a special hypodermic tablet which contains among its ingredients half a grain of eserin. Dr. Carlisle N. Darke paid a high tribute to the hydrobromate of arecoline in colics. In gaseous subjects it works most wonderful results, though he frequently has to tap them before its administration. He claims that in his practice, which consists largely of heavy draught animals, his results have been miraculous since adopting the alkaloid of areca nut, while it is equally beneficial in laminitis. The subject of the use of the trocar was brought forward by Dr. Parry, who claimed that the results from its employment had been disastrous in his hands, and he had discarded it forever more. This brought many of the most prominent members of the profession in the city to their feet, and it became evident that the trocar holds a very firm position in the surgery of colics. Many told of repeated tapping of the same subject with no ill results, and the worst that could be charged against it was an occasional abscess at the seat of puncture, which was of little importance so far as the life of the patient was concerned, and it was shown that many lives are saved solely by its use. Dr. Bowers spoke upon various forms of colic, believing that the tendency was always to recover, if serious lesions did not exist, and he cautioned the members about doing too much. And so the discussion continued until the Chair stated that no more time could be devoted to the subject.

Dr. Grenside, who was to have presented his paper on "Quality in Horses," sent a letter to the meeting regretting that a pressing business engagement prevented him from being present, but stating that he would be on hand at the January meeting prepared to read it.

Dr. E. B. Ackerman then offered two case reports in canine medicine, which were very thoroughly described and carried to an ultimate finish by making careful autopsies. His first case was that of a bull terrier, which presented a single symptom of dumb rabies (paralyzed lower jaw), but with all other manifestations absent. He had called in Dr. Bell in consultation, who

had agreed with him that, while the single symptom was an extremely suspicious one, there were many which pointed to a traumatic brain lesion. The animal was securely isolated for observation; he became more subject to hallucinations, but paralysis did not progress, and on the following day the animal was chloroformed, his head removed and sent to the Willard Parker Laboratory. Here an examination of the brain failed for a time to disclose Negri bodies, but a second report from the laboratory stated that they were present. Inoculations to guinea-pigs and rabbits produced unmistakable rabies. This case then simply goes to join the great number which are being reported with inconstant symptoms. This patient when first seen had a wry neck, which symptom was noted in the interesting discussion on rabies before the last meeting of the Minnesota State Association, so fully reported in the December REVIEW.

His other case was that of a setter dog, which showed symptoms of leukemia, and, as it was old and incurable, it was destroyed, and the body sent to Dr. W. Reid Blair, pathologist of New York Zoölogical Park. Dr. Blair wrote Dr. Ackerman a full report of his findings, and he declared that it was one of the most interesting post-mortems which he had ever held, particularly when the number and extent of the lesions were considered. The liver, spleen, and glands were greatly hypertrophied, while the heart was loaded with *Filaria immitis*. Dr. Blair explained to the meeting the technical pathological lesions, and brought with him the organs in glass jars, while he had prepared slides for examination under the microscope, as well as colored drawings to bring out the points more plainly. It was a case of leukemia, though the extent of the lesions were such as to cause amazement that the animal could have lived so long.

Following these two interesting cases, Dr. R. B. Plageman, of Brooklyn, asked consent to read a short paper, which was granted. His subject was rabies, and he dealt largely with the clinical phase of the disease, asserting that any practitioner who had ever seen a case of it could not mistake a second one. This statement does not seem to be in harmony with the experiences of the Minnesota veterinarians or with many others who have seen hundreds of cases. Of course, if every dropped jaw is a rabid animal, it is not difficult to diagnose it; but this is not pathognomonic, nor is it constant. Dr. Lyman, for instance, brought with him from Hartford to the Pasteur Institute the

body of a dog which had died the night before in which the disease began with paralysis of one hind leg, gradually advancing toward the brain until he died. He did not exhibit the paralyzed jaw at any time.

Following Dr. Plageman, the annual election of officers took place, resulting as follows:

President—Dr. Roscoe R. Bell (reëlected).

Vice-President—Dr. Charles E. Clayton (reëlected).

Secretary-Treasurer—Dr. W. Reid Blair.

The President appointed the following members as a Board of Censors, to act during the ensuing year: Drs. James L. Robertson (chairman), Robert W. Ellis, F. C. Grenside, Chas. E. Clayton, and George F. Bowers.

The President also appointed the following Committee of Arrangements to act with a similar committee of the New York StateVeterinary Medical Society in preparing for the 16th annual meeting, which occurs in New York City next September: Drs. Robert W. Ellis (chairman), F. C. Grenside, E. B. Ackerman, Theodore A. Keller, D. J. Mangan, and Secretary W. Reid Blair.

The application of Dr. J. E. Crawford, of Far Rockaway, a graduate of the New York-American Veterinary College, was presented, properly endorsed, and he was unanimously elected to membership.

A full program is announced for the January meeting, including Dr. W. L. Williams, of Ithaca, N. Y., Dr. Thomas G. Sherwood (report of a case of tuberculosis in the dog), Dr. Grenside's paper on "Quality in Horses"; Dr. Gill will exhibit an interesting little canine with abnormalities of the iris; and a Question Box, in case it can be reached.

It is expected that Dr. Cecil French, of Washington, D. C., will be the chief speaker at the February meeting. (R. R. B.)

THE SOCIETY OF THE VETERINARY ALUMNI, UNIVERSITY OF PENNSYLVANIA, has appointed Drs. H. D. Martien, of Philadelphia, Pa., E. W. Powell, of Bryn Mawr, Pa., and W. H. Ridge, of Trevose, Pa., as a committee to assist in the development and success of the undergraduate organization, the Veterinary Medical Society of the University of Pennsylvania. The students have an active organization, and the interest shown by the Alumni, last year, was thoroughly appreciated. Dr. B. T. Woodward, B. A. I., Chicago, Ill., is Secretary-Treasurer of the Alumni.

THE ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION, which held a most successful annual meeting at Chicago Dec. 4-5, elected its late Secretary, Dr. F. H. Barr, of Pana, to the Presidency, and Dr. N. I. Stringer, of Paxton, Secretary. We have received the full minutes of the meeting, together with all the papers read. The minutes and most of the papers will appear in the February REVIEW.

THE RIDING ACADEMIES OF EASTERN CITIES were never so prosperous as they are this winter. The Durland Company, of New York, has nearly 700 horses boarding in its large stables in West 66th Street.

A PAINFUL ACCIDENT recently befell the eminent English veterinarian, Sir John McFadyean, caused by the shieing of the horse which he was riding. The result was that he was thrown violently to the ground, his right shoulder sustaining a fracture with displacement of the head of the humerus. After administering chloroform, the bones were replaced, and in a few days he resumed the conduct of his duties.

THE LOU DILLON "DOPE" CASE.—The famous Memphis Gold Cup controversy, in which the owner of the trotting gelding Major Del Mar (E. E. Smathers) was charged by the Secretary of the Memphis Trotting Club with having caused medicines to be administered to his competitor, the trotting queen, Lou Dillon (owned by C. K. G. Billings), causing the mare to lose the contest, has been decided by the Board of Review of the National Trotting Association in favor of Major Del Mar, and Mr. Smathers therefore retains possession of the $5,000 trophy. As a consequence both Spears and Sanders, each of whom claimed to have administered "dope" to the mare at the direction of interested parties, have been expelled from all tracks under control of the National Association. If the great mare received the medicines said to have been given, she not only had reason to be "groggy" in her performance, but she has demonstrated her wonderful powers of endurance in more ways than prolonged speed efforts. Here is a list of the drugs said to have been given to her:—By E. M. Sanders, injection of eight ounces of mercury; by Millard F. Sanders, two doses from a mysterious bottle labelled "A. A."; by Millard Sanders, one bottle of champagne; by Dr. Julius W. Scheibler, one-tenth of a grain of strychnine; by Dr. Frank Fehr, one dose of belladonna.

LAWS GOVERNING VETERINARY PRACTICE.

TABLE INDICATING THE REQUIREMENTS OF STATE LAWS GOVERNING THE PRACTICE OF VETERINARY MEDICINE THROUGHOUT THE UNITED STATES, WITH NAMES AND ADDRESSES OF EXECUTIVE OFFICERS.

(Compiled from data contained in Handbook 12 of the Education Department of the State of New York, and from the report of the Committee on Intelligence and Education (C. J. Marshall, chairman) of the American Veterinary Medical Association, 1906).

STATE.	Preliminary Education	Professional Training.	Licensing Tests.	Registry.	Executive Officer and Address.	Administrative Board.	Remarks.
Alabama.	.....	.....	.....	.....	.....	.....	No Law.
Alaska.	.....	.....	.....	.....	.....	.....	" "
Arizona.	.....	.....	.....	.....	.....	.....	" "
Arkansas.	.....	.....	.....	.....	.....	.....	" "
California.	No requirements.	Graduation from legally chartered school.	Approval of diploma by State Board.	With the Clerk of the County of practice.	David F. Fox, President, Sacramento, Cal.	State Veterinary Medical Board.	
Colorado.	No requirements.	Graduation from recognized school	Examination at discretion of B'ard	Not required.	F. W. Culver, Sec., Longmont.	State Veterinary Medical Board.	
Connecticut.	No requirements.	In Anatomy, Physiology, Obstetrics, Pathology, Therapeutics and Theory and Practice.	Examination by State Board.	With the Secretary of the State Board.	Richard P. Lyman, Sec., Hartford.	State Board of Veterinary Registration and Examination.	
Delaware.	21 years of age. Good moral character. Common school education.	Graduation from legally incorporated school.	Examination at discretion of State Board.	With the State Board.	Secretary.	State Board of Veterinary Medical Examiners.	
District of Columbia.	.....	.....	.....	.....	.....	.....	No Law.
Florida.	.....	.....	.....	.....	.....	.....	" "
Georgia.	.....	.....	.....	.....	.....	.....	" "
Hawaii.	.....	.....	.....	.....	.....	.....	" "
Idaho.	.....	.....	.....	.....	.....	.....	" "

STATE.	Preliminary Education.	Professional Training.	Licensing Tests.	Registry.	Executive Officer and Address.	Administrative Board.	Remarks.
Illinois.	21 years of age. Good moral character.	No requirements.	Exam. diploma from recognized school accepted in lieu of exam.	With the Clerk or Recorder of the county of practice.	H. E. Wadsworth, Secretary, Springfield.	State Board of Live Stock Commissioners.	
Indiana.	No requirements.	Graduation from a reputable school	Exam. in case diploma is from college not recognized by S. Board.	With the State Board.	J. N. Hurty, Secretary, Indianapolis	State Board of Veterinary Examiners.	
Iowa.	21 years of age. Good moral character.	Graduation from recognized school	Examination.	With the Recorder of county of residence.	H. E. Talbot, Secretary, Des Moines.	State Board of Veterinary Medical Examiners.	
Kansas.	.....	.....	.....	.....	.....	.....	No Law.
Kentucky.	.....	.....	.....	.....	.....	.....	" "
Louisiana.	.....	.....	.....	.....	.....	.....	" "
Maine.	No requirements.	Graduation from a legally chartered school.	Examination.	With Sec. State Board and Clerk Supreme Court of county of examination.	A. Joly, Secretary, Waterville.	State Board of Veterinary Examiners.	
Maryland.	No requirements.	Graduation from incorp. school.	Examination.	With the State Board.	W. H. Martinet, Sec., Baltimore.	Veterinary Medical Board.	
Massachusetts	21 years of age	No requirements.	Examination.	With the State Board.	E. W. Babson, Sec., Gloucester.	B'd Registration in Vet. Med.	
Michigan.	No requirements.	No requirements.	Exam. or dip. from regu. school.	With Clerk of county of practice	C. A. Waldron, Sec., Tecumseh.	State Veterinary Board.	
Minnesota.	No requirements.	Grad. from legally authorized school	Examination.	With the State Board.	C. C. Lyford, Sec., Minneapolis.	Board of Vet. Med. Examiners.	
Mississippi.	.....	.....	.....	.....	.....	.....	No Law.
Missouri.	No requirements.	No requirements.	Examination.	With the State Board.	D. F. Luckey, Sec., St. Louis.	Veterinary Examining Board.	

STATE.	Preliminary Education.	Professional Training.	Licensing Tests.	Registry.	Executive Officer and Address.	Administrative Board.	Remarks.
Montana.	.....	.....	.....	.....	.....	.....	No Law.
Nebraska.	No requirements.	No requirements.	Examination.	With State Board.	H. Jensen, Sec., Weeping Water.	Nebr. Vet. Asso.	
Nevada.	.....	.....	.....	.....	.....	.....	No Law.
New Hampshire.	No requirements.	No requirements	Exam. or grad. from a lawfully constituted school	With the State Board.	R. I. Twombly, Secretary, Berlin.	State Board of Veterinary Examiners.	
New Jersey.	21 years of age. Good moral character. Competent school education.	Grad. rom legally incorp'd school having three year course approved by State Board.	Examination and practical tests.	With the State Board and with the Clerk of the Court of Common Pleas.	Wm. Herbert Lowe, President, Paterson.	State Board of Veterinary Medical Examiners.	
New Mexico.	.....	.....	.....	.....	.....	.....	No Law.
New York.	Graduation from a four year secondary school course subsequent to 8 years elementary preparation.	Graduation from a registered school	Examination.	With the Clerk of the county of practice.	Chas F. Wheelock, Chief of Examinations Division N. Y. State Education Department, Albany.	Examinations Division of New York State Education Department.	
North Carolina.	No requirements.	No requirements.	Examination.	With Sec. State B'd and Sup. Ct. of c'ty of residence	T. B. Carroll, Sec., Raleigh.	Board of Veterinary Medical Examiners.	
North Dakota	No requirements.	Graduation from a legally authorized school.	Examination.	With Board annually.	J. N. Sheppard, President, Fargo.	State Board of Veterinary Medical Examiners	
Ohio.	No requirements.	No requirements.	Examination. Diploma from reputable school accepted in lieu of examination.	With the Secretary of the State Board.	David S. White, Secretary, Columbus.	Board of Veterinary Examiners.	
Oklahoma.	.....	.....	.....	.....	.....	.....	No Law.

STATE.	Preliminary Education.	Professional Training.	Licensing Tests.	Registry.	Executive Officer and Address.	Administrative Board.	Remarks.
Oregon	No requirements.	No requirements.	Exam. Dip. school good standing in lieu of exam.	With the Clerk of the coumty or practice.	William McLean. Secretary, Portland.	State Veterinary Medical Board.	License covers 4 yrs; renewed without exam.
Pennsylvania.	21 years. Good moral char. Comp't school education.	Graduation from a legally incorporated school.	Examination.	With State Board annually.	W. Horace Hoskins. Secretary Philadelphia.	State Board of Veterinary Medical Examiners.	
Philippines.	.....	.....	.....	.....	.....	.....	No Law.
Porto Rico.	.....	Graduation from school of good standing, or examination by Board.	Graduation or examination.	Present certified foreign diploma and receive corresp'ing degree from Univ. of Havana.	.....	Board composed of dean of Medical Society, two vet. surgs. and two M. D's.	Law promulgated by Military Governor in 1902.
Rhode Island	.....	.....	.....	.....	.....	.....	No Law.
South Carolina	.....	.....	.....	.....	.....	.....	" "
South Dakota.	.....	.....	.....	.....	.....	.....	" "
Tennessee.	Good moral character.	No requirements.	Examination or graduation from a recognized school	With S. Board and Clerk of Court of county of resid.	Geo. R. White, President, Nashville	State Board of Veterinary Medical Examiners.	
Texas	.....	.....	.....	.....	.....	.....	No Law.
Utah.	.....	.....	.....	.....	.....	.....	" "
Vermont.	.....	.....	.....	.....	.....	.....	" "
Virginia.	No requirements	No requirements.	Examination.	With Sec. of the State Board.	H. Bannister, Sec., Roanoke.	State Board of Vet Med. Exam.	
Washington.	.....	.....	.....	.....	.....	.....	No Law.
West Virginia.	.....	.....	.....	.....	.....	.....	" "
Wisconsin.	No requirements.	Graduation from a legally incorporated school or certificate of qualification from a legally incorporated society.		Name of Registrant, of institution grant'g Dip. or soc. grant'g certif. must be registered with Register Deeds in county of practice.	Chas. Schmitt. President Society Veterinary Graduates, Dodgeville.	No State Board of Veterinary Medical Examiners.	
Wyoming.	.....	.....	.....	.....	.....	.....	No Law.

AMERICAN VETERINARY REVIEW.

FEBRUARY, 1907.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, Dec. 15, 1906.

VETERINARY CIVIL SERVICE EXAMINATIONS.—A short time ago Prof. Leclainché, the able director of the *Revue Générale*, published in his journal a long leading article on the *Scandales* of Chicago. Inspired by the reading of the sensational book of Upton Sinclair, and made up with many of the fanciful descriptions of the author of "The Jungle," the leader of Prof. Leclainché attracted much attention, and no doubt created among those who read it a rather poor impression of the work done by the veterinarians of the Bureau of Animal Industry, and it would have been but just and right that the article of Dr. D. Arthur Hughes, treating on the subject of meat inspection, and published in our October issue, should also have been analyzed in the pages of the *Revue Générale*, although it would not have been as sensational as the extracts from Upton Sinclair. Anyhow, it would have served to put things in their proper focus!

At the end of his article, Prof. Leclainché speaks of the new law in the United States relating to the inspection of meat and of the inspectors, saying that it would be easy to show that the reorganized American inspection is not yet up to its task; that it was true 150 new positions had been created, but that the program of the examination had remained what it was, and that from it one could imagine what could be expected from those newly appointed, and in marginal notes the condition of what the *Revue* calls a *scandalous* program is given in full!

I have for Prof. Leclainché a great deal of respect and of friendship, but I must acknowledge that this part of his article caused me much sadness and disappointment, and I made up my mind to obtain all the documents I could, so as to be able to reply to him. I have secured from Washington and from the States some information, and, to my great surprise and sorrow, I find that I have nothing to reply to the Professor. On the contrary, if I had anything to say, I would thank him for showing us the disgraceful condition the veterinary inspector of America is placed in when compared with those of Europe—at least, as far as the requirements for the position are concerned.

What are these requirements, and what is the examination before the Civil Service Commission? According to the "Manual of Examination," revised to July 1, 1906, page 57, section 208, it is as follows:

"Sec. 208. Veterinary Inspector, Bureau of Animal Industry, Department of Agriculture.—(First a few generalities relating to credentials as to age, application, time allowed and condition of graduation in a veterinary college, and then come the subjects of examination and relative weights of subjects on a scale of 100): '*Spelling, 5; arithmetic, 5; letter writing, 5; penmanship, 5; copying from plain copy, 5; veterinary anatomy and physiology, 15; veterinary pathology and meat inspection, 30; theory and practice of veterinary medicine, 30.* The last three subjects include general questions on anatomy and physiology, a consideration of the pathology of diseases in general, and such special pathology as is characteristic in the diseases common to food-producing animals. The symptoms, diagnosis and treatment of diseases incident to domesticated animals will be considered; also, the laws and rules promulgated for the regulated inspection of meats.'"

* * *

Let us compare these with the requirements in Europe, at least in the two countries from which I have been able to get them (France and Italy). I regret that I am not able to show

those of Germany, but I believe that, if they differ, it is in being more severe in the last named country.

In France.—Credentials about age, judiciary penalty record, liberation from military service and presentation of the diploma of veterinarian are the first conditions to be complied with before a candidate is admitted to present himself. In 1887, about the time of the organization, there were two examinations, one written, a study on diseases which are likely to alter the meat, and then a report on the presence of such. The other was a practical examination, divided into two parts: (1) examination of diseased meats and detection of the causes of their being retained or condemned; (2) microscopic examination of diseased meats.

In a recent call for candidates, similar credentials are also demanded, the diploma being always necessary, or in its place a certificate from the school the candidate has attended. The candidates are submitted to three series of examinations: *First*, a written one, consisting of the redaction upon a subject relating to the sanitary police of animals, to the control of meats or to the inspection of the classified establishments. Four hours are allowed for this task. *Second test*, a practical examination at *the cattle market*, including (*a*) a clinical examination of animals affected or suspected of contagious diseases, and oral description of the diagnosis; (*b*) macroscopic examination of meats, with oral description of the causes for saisie, if there is; determination of the organs or of the regions according to the descriptive and topographical anatomy.

(3) *At the Alfort School*, three tests: (*a*) microbiological analysis of unwholesome meats or of cadavers of animals affected or suspected of contagious diseases; (*b*) examination of unwholesome meats and of falsified fleshy products to the chemical point of view; (*c*) concise demonstration of the results obtained and the methods used in the analysis. Finally, an oral examination is to be passed on the following: Administrative and judiciary organization in France, sanitary police, control of meats, inspection of classified establishments, laws and regulations.

In Italy I find, in the *Clinica Veterinaria*, that a candidate has to furnish credentials consisting of certificate of birth, of nationality, of exemption from judiciary penalty, of good conduct and of recent vaccination, and, of course, his diploma. The examination consists of: (1) A written examination upon a subject of sanitary police; (2) a written examination upon a question of public alimentary hygiene, made in an official sanitary form; (3) an oral examination upon the infectious and epizoötic diseases of cattle, on parasitic, non-microbian diseases, and upon sanitary legislation; (4) a practical examination on microscopy and bacteriology; (5) a practical examination of inspection of meat at a market; (6) a clinical examination of animals affected or suspected of contagious diseases.

* * *

What can be the conclusions on the status of affairs? It seems that nothing else can be done than to have the requirements of the Civil Service Examination revised entirely, and to make them what they ought to be.

Doctor Melvin, the new chief of the B. A. I., is a zealous chief; he is a good veterinarian; he is doing good work, but he can make a better one and gain for himself a great name by obtaining this important reform!

Would it be impossible to find candidates? Would the changes be so difficult to realize, even in trying only something less severe?

I think not! I believe the contrary!

In the same way that the Bureau of Animal Industry has been, with the influence of the A. V. M. A., one of the great powers which have made a three-years attendance at college obligatory for graduation and for admission to the Bureau, let it use, to-day, its influence in demanding of the many colleges in the Union a similar requirement for admission to school, thus doing away with the necessary *spelling*, *arithmetic*, *letter-writing*, *penmanship* (?) of the examination before the C. S. Commission. Let it use its influence in requiring from its candidates to inspectorships a uniform education obtained from

schools having a similar curriculum, thus doing away with the obligation of another examination on *veterinary anatomy and physiology*, *on pathology and meat inspection*, *on theory and practice of veterinary medicine* by the C. S. Commission, which is useless and good only to worry and trouble the candidate, as long as he already can present evidence of being in possession of all these (namely, his DIPLOMA) !

It then would leave only the examination of true specialties, such as sanitary science, sanitary police, sanitary pathology and medicine, meat inspection, microscopy and microbiology, in which the applicant would have to make separate but more serious studies than when at college, and upon which, after passing satisfactorily a written, oral and practical examination, he will deserve and receive his title of Sanitary Veterinary Inspector.

I fear and I know that the above remarks will not be received in the spirit in which I make them, and probably the new program will not be entertained as an improvement by some of the candidates. However, I offer the suggestion, as I do believe the entire veterinary profession would gain by having the reform realized: gain not only in obtaining men better fitted for the work and in obliging the schools to modify their mode of admission and improving their curriculum, but by assuring our professional standing among the scientific bodies of the world.

* * *

REVIEW OF THE TREATMENT OF RABIES.—Dr. P. Remlinger, Director of the Institute Pasteur of Constantinople, has published in the *Revue Scientifique* an article on the present state of the treatment of rabies, which has attracted much attention and from which I extract a few points. For a few months the directors of antirabid institutes (and they are numerous on the surface of the globe, nearly a hundred), have been much interested in the communications which have been published upon the action of radium on the rabid virus. "Interested" is the word undoubtedly ! It was just their existence which was threatened ! While it appeared by the works of

Jules Rehns, and of Jirnow, that the attenuation of the rabid virus under the influence of radium was of no practicable value, the sensational publications of Tizzoni and Bongiovanni, to which I alluded in my "Chronicles" of last April, were to have for result a complete revolution in the therapy of rabies by the use of this metal. An emulsion of 1 per cent. of rabid cord submitted to the action of radium, was rendered harmless for the dura mater of rabbits; it was transformed into a vaccine of such activity that animals, to which an injection of one drop was made in the eye, were vaccinated against the subdural inoculation of street rabid virus. Not only that! If one rabbit was inoculated with rabid virus and if radium rays were afterward thrown in the eye of the animal, he would escape the disease. The treatment would even be successful if the paralysis of the hind legs already existed. This would stop the disease and the animals would get well, while the witnesses would die on the sixth day. The question was, then, if truly the prophylactic treatment had not seen its day, and if in the future it would not be sufficient to wait until the disease was present to treat it with the same right as is done for lupus or for an epithelioma!

* * *

But, continues Remlinger, these expectations were not realized! Already in the Congress of the Italian Society of Internal Medicine, Calabrese made the declaration that, even at the dose of 100,000 radioactive units, radium had no more effect upon rabid virus than Röntgen rays; and afterwards, in another article, he confirmed his previous announcements. *In vitro*, after seventy-two hours of contact, there is observed a slight, irregular and not constant attenuation. *In vivo*, even after a contact started immediately after the trepanation, the essential condition of Tizzoni and Bongiovanni, and kept up twelve hours during two consecutive days, not one animal has been saved. It is true, however, that the death of the animals treated has sometimes been a little slower than with the witnesses, but it has been so slight that the hope to cure rabies with radium must be com-

pletely given up. As a mode of treatment of declared rabies, radium must go with the other remedies, such as the subcutaneous injection of normal cerebral substance in large doses of Babes, Kowalski, Krokiewiez, or of pilocarpine of Remlinger, or the lumbar puncture with injection of fixed virus made in the rachidian canal of Zaccaria, and many other recent attempts just as worthless. Rabies, sometimes spontaneously curable in dogs, has in man a prognosis which is absolutely fatal, and to-day, as before, the treatment worth consideration is, not the curative, but the preventive!

* * *

The prophylaxy of rabies is based upon the immunization of the persons which have been bitten, by subcutaneous injections of a special virus, called fixed virus, which is used first much attenuated, gradually more active and finally very virulent. The methods of preparing the virus may vary, but the treatment is about the same, and the results very markedly identical.

The Doctor keeps on with a consideration of these results, which I have spoken of on other occasions.

While it may seem that the question is solved by the criticisms of the Director from Constantinople, it remains yet open, and in the *Annales of the Pasteur Institute of Paris*, the Italian experimentors have come out with another article on the subject, and appear to reopen the discussion. It seems that there is radium and radium. Some which will give the results they have obtained first and some that do not. Their last researches have shown them "that in certain limits, the efficacity, upon rabies, of samples of radium of various power is not in direct relation with the difference of their physical properties; in such a way that the effects of more active samples are a little more rapid than those of weaker samples, but in a much smaller proportion than is observed for the difference of their radioactive strength."

At any rate, their conclusions are that if with radium rabbits can to-day be cured of rabies, there is no reason why in the

same conditions the same results cannot be obtained in man!

Probably we will hear more of this later.

* * *

BIBLIOGRAPHY.—My bibliographical notes this month will be a kind of trip around the literature of the world, covering as it will, considerations on works which come from France, Italy and America, and which have been kindly sent to me by their authors. The large amount of material on hand must necessarily receive proper attention as soon as possible, and to postpone my acknowledgments to every one until the next month would certainly be a breach of politeness that the REVIEW must not be guilty of. Therefore, if my "European Chronicles" may suffer, at least my correspondents will not have the chance of blaming me, and I will consider the books received in the order they have come to my office.

* * *

"*The Elements of Clinical Diagnosis* (*Medical Semiology*)," by Professor Malkmus, of Hanover, translated from the German by Mr. A. Monvoisin, of Alfort. It is the reproduction of the second German edition of a very good little book with which our friends in America are already familiar by the translation which was published in 1901, and due to the pens of Profs. D. S. White and Paul Fischer, of the Ohio State University. I believe they translated the first edition; the work of Mr. Monvoisin is of the second. If I read aright, a third German edition is soon to appear in Germany.

In this little French work, we find the same occasion for praise as we did in the notice that was written in 1901 in this journal. But it offers besides special additions made by the French writer, annotations of great value. There are also a number of new illustrations. Besides all this, a preface has been written by Prof. Moussu, who has also recalled the importance of the necessity of proper diagnosis and insisted on the advantages that such a book gives to all those who desire to make one. The facts that the original book is in its third edition, that it is published in English, and now in French, say

more of its value than any critic might see fit to write.

* * *

The house of Asselin and Houzeau, which publishes the work of Mr. Monvoisin, has brought out almost at the same time another of great value, "*L'Abattoir Moderne*" (the Modern Abattoir), by Dr. A. Moreau, Sanitary Veterinarian. No man could have been more competent or better qualified to write such a work than Dr. Moreau is. Attached to the great slaughter-house of La Villette in Paris, he had the facilities for his researches, to look in all the official documents that he needed; he had lots of good material to study from, and, besides, an experience of many years. Scientific man, superior practical worker, Dr. Moreau has written an excellent work, in which are condensed all the information, and those interested in that direction will gain much in reading it. A preface is written by one of the best chiefs of the meat inspection service and followed by an introduction where the conditions of the old slaughter places, their regulations, and legislative dispositions, are considered. Then comes the grand subject of the modern abattoir, its disposition, arrangement, tools, rooms for slaughtering of cattle, pigs, horses, cooling rooms, freezing rooms, etc. It would be a difficult task for me to follow the author in all the special points which are contained in his book. It requires a specialist to do it, and it is in fact a book that all those who are interested in that specialty of meat alimentation must read and study. The meat inspector, the sanitary builder, the civil authorities, the official administrator, all, can obtain from reading it very important and very suggestive information. The numerous illustrations, the plans of several of the abattoirs of some of the principal cities in Europe, where those establishments are most modern, and the many references from every country of the old continent, show the great amount of valuable information that is to be found in the work of Dr. Moreau. The author deserves great credit, and no doubt his book will find its place among the best of the literature on that subject.

From Italy I received "*Studi sul bestiame del Montenegro, della Bosnia-Erzegovina e della Dalmazia*," (Study upon the Cattle of Montenegro, of Bosnia-Erzegovine and of Dalmatie), by Dr. Antonio Pirocchi, Director of the Institute of Zoötechny of the Superior Royal School of Agriculture of Milan. This forms the *résumé* of the work done by the author, who was sent by the General Inspector of the Industry and Commerce to go and study the conditions of the cattle, sheep and swine of these countries. In the first part the reader is presented with the consideration of the cattle in Montenegro in regard to the conditions of climate, number, breed, and their products in meat, milk or even labor. Sheep, goats and swine afterwards receive the same attention. Horses, asses and mules complete the series. The breeding and the general conditions of trade close the first part. In the second portion of the manuscript, only bovines and ovines are the subjects of remarks on the part of the author. To the point of view of zoötechny, this concise work presents a great deal of interest and the many handsome and characteristic illustrations, taken on the spot, give to the little extract of the Annals of Agriculture an unusual value.

Zoötechnicians of all nations will read this little work with much interest.

* * *

From America, among several pamphlets from the Bureau of Animal Industry, I notice "*Tuberculin Test of Hogs and Some Methods of Their Injection with Tuberculosis*," by E. C. Schroder, M. D. V., and John R. Mohler, V. M. D.,—a pamphlet of some fifty pages, where, as in all publications from the B. A. I., the reader finds always very interesting fields of information. Certainly in this last many points have received an amount of clearness which is of great importance. The variability of the temperature and the conditions under which it may vary, have been the subject of careful observations, which will bring valuable weight in the use of the thermometer with that class of animal.

"*Veterinary Surgery*," by Louis A. Merillat, V. S., is the second volume of the work that the author has undertaken to present to the American profession. The proper heading is "The Principles of Veterinary Surgery," and is published by the house of Alexander Eger, of Chicago, which has favored me with a copy.

Dr. Merillat is already well known to the profession; many of his writings have been presented to our readers. He has had the good fortune to succeed in obtaining from the French publishers an authorization which I know is not always easy to have from French houses, and the profession in America will now have the privilege of becoming acquainted with works which it has been my pleasant duty to notice in my "Chronicles" before this.

In "Principles of Surgery" the American author has introduced the translation of one volume of the "Encyclopœdia" of Prof. Cadéac, enlarged and rearranged.

The work is divided into two parts. After a concise preface, the first part, which is divided into eleven chapters, contains generalities arranged as follows: Chapter 1, regeneration and reparation; chapter 2, inflammation, anatomical process of inflammation; chapter 3, fever, pyrexia; chapter 4, gangrene, œdema, thrombosis and embolism, atrophy; chapter 5, bacteria, microscopic examination of bacteria, pyogenic microörganisms, specific surgical microörganisms; chapter 6, immunity, types of immunity, theories of immunity, opsonins, serums; chapter 7, surgical shock; chapter 8, hæmorrhage and hæmostasis; chapter 9, restraint; chapter 10, anæsthesia; chapter 11, asepsis and antisepsis, routine of wound treatment, practical asepsis, recommendations for aseptical operations. The second part is the one where the translation of Prof. Cadéac is to be found. This is arranged in only four chapters. In the first, all kinds of wounds are considered; in the second, abscesses, ulcers, fistula, septicæmia, pyæmia, tetanus, actinomycosis, botryomycosis; in the third chapter, melanosis, and in the last chapter some of the varieties of tumors, with a few of the diseases affecting the bony

tissues, rachitis, cachexia, osteoporosis, achondroplasia and sniffling disease of hogs.

The "Principles of Surgery" is well gotten up and well presented; it is illustrated with a little over a hundred figures, and by the annotations which the author has introduced in the second part he has rendered the work more valuable. If the contents of the first part may not be entirely original, and if the second is but a translation, the addition of the annotations is certainly from the author, and is a very good addition. Dr. Merillat's work will no doubt be a great assistant to students, and old practitioners will read it with pleasure.

* * *

"*Pathology and Differential Diagnosis of Injectious Diseases of Animals*"—such is the title that Prof. Veranus A. Moore, B. S., M. D., has had the amiability to send me. Second edition, revised and enlarged, the book is dedicated to Daniel Elmer Salmon, D. V. M., the late Chief of the B. A. I., who has written an introductory, where it is wisely remarked: "An elementary treatise on the pathology of the infectious diseases of animals has long been needed, not only by the students, but by members of the profession. . . . A work which supplies this need will be welcomed and appreciated."

Let us first look at the contents of the work. We find that they are divided into fourteen chapters. The first treats of generalities, such as etiology, infection, dissemination and classification of infectious diseases, and the classification of bacteria of Migula; then begins the series of diseases attributed to wound infection, with considerations on botryomycosis, omphalophlebitis, white scours in calves, infectious suppurative cellulitis, fistulous withers, etc. In the third chapter the diseases caused by bacteria, genus streptococcus, strangles, equine contagious pleuro-pneumonia, apoplectiform septicæmia in chickens, streptococcus mastitis. In the following chapter the affections due to bacteria, genus micrococcus, takosis. Chapter 5 contains the diseases due to bacteria, genus bacterium, pasteurelloses, swine plague, hæmorrhagic septicæmia in cattle, fowl cholera, anthrax,

glanders, etc. Chapter 6 treats of those caused by bacteria, genus bacillus, with hog cholera, tetanus, black-leg, foot-rot in sheep; bacteria of the family spirillacæ, with diseases caused by spirilla, are the subject of chapter 7, while in the 8th we find the diseases caused by fungi, actinomycosis, actinobacillosis, leeches, pneumonomycosis, epizoötic lymphangitis, farcy in cattle, mycotic stomatitis and blastomycetes infection in horses. Chapter 9 represents the diseases caused by protozoa, genus piroplasma, Texas fever, ictero-hæmaturia in sheep, equine malaria and canine malaria. The troubles due to the protozoa, genus amœba, are considered under the title of infectious entero-hepatitis in turkeys. The diseases due to protozoa, genus trypanosoma, surra, dourine, mal de caderas, and nagana occupy chapter 11, and finally in chapter 12 the consideration of the infectious diseases for which the specific cause is not yet determined—rinderpest, dog distemper, contagious pleuro-pneumonia in cattle, foot-and-mouth disease, rabies, influenza, etc. The last two chapters treat of immunity and protective inoculation and of disinfection.

As can be seen, the field covered by the author is very broad, and it certainly has demanded from its author a great deal of work. Those who know him, also know that this would not have stopped him, and to the question that might be asked, "Has he succeeded in his object,"—namely, in "the production of a book which will supply a need, stating briefly, clearly and comprehensively all that is known, and exclude all that is not," —the answer must be positively affirmative.

Well posted already by the many researches he has made and by the numerous investigations in which he has been engaged, selecting the positive facts and leaving aside all that still remains in doubt, Dr. Moore has given the profession of America a book which will impose its place among the best in American veterinary literature, and no doubt, as Dr. Salmon says in the introduction, it will be "welcome and appreciated."

This valuable publication is from the house of Taylor & Carpenter, of Ithaca, N. Y. A. L.

MEAN REFLECTIONS ON VETERINARY PROGRESS.

In less than half a century a veterinary profession has been built up in America which most of us are not ashamed of, and in which we have the greatest faith. If we are not abreast of some of the European countries in theory, we are in advance of most of them in practice and in surgical achievements. These facts are the more remarkable when it is considered that, although the first charter granted to a veterinary school in America was just fifty years ago, it is not much more than half this time since the teaching of veterinary science began in earnest. It is bootless here to recite the difficulties which beset the pathway of the pioneers, and how the devoted labors of a few earnest men prevailed against all obstacles, ever keeping in view the highest ideals, and striving to sow sound seed for the harvest of the future, frowning upon every act and sentiment which did not tend in that direction—struggling, pleading, urging, and employing every honorable means to place veterinary medicine upon the same level with the older and most advanced sciences. Step by step the cause for which they labored has moved toward a realization of these ambitions; and, although we are very far from idealism, we are proud of the progress made in these comparatively few years. No one who is conversant with veterinary educational conditions as they exist in some European countries can feel contentment when he compares them with those which maintain on this side of the Atlantic; but the student of educational progress must see in the majority of our schools a rapid advancement toward the realization of our hopes.

But while the major portion of our schools are working in the best interests of the cause as they see it, and under conditions as they find them, there are some so-called "colleges" which are a real hindrance to progress of any kind, and should be condemned by all who have our interests at heart. Therefore, while the great majority of the schools are working assiduously and to good purpose, to promote our moral and educational standard, there are others whose influence is in an

opposite direction, and it would be for the everlasting good of veterinary medicine if their doors were closed for all time.

One of these so-called "colleges" is sending broadcast advertising literature that would disgrace an itinerant "quack," and offering inducements to dupes that are in keeping with dime museum methods. From correspondents in various Western states we have received examples of the "stuff" that is being sent out by these "colleges." Here is a sample:

"After many years of great care and experiment we have at last found a remedy that will *cure Fistula* in all of its stages by being given internally. It has been known for a long time that fistula is caused by a germ, but the agent that would destroy that germ has been heretofore unknown. As all germs travel through the blood current, the only way to kill them is by some agent that will work against them in the blood. We have discovered this agent, which can be given to the animal either in the feed or drinking water. This is the only remedy that will positively cure. It is not an experiment, but a fact. Enough to treat an ordinary case will be sent prepaid on receipt of price. Full directions will be sent with each bottle. Prices: Single box, $5.00, prepaid, by express; half dozen boxes, $20.00, prepaid, by express; full dozen boxes, $36.00, prepaid, by express. Address ——— ——— College, ———.

Of course, the "graduates" of such "colleges" receive no recognition from any ethical veterinary organization in this country, and there are few states having laws regulating practice where they can impose themselves upon the public. While these few examples of the remains of the days of charlatanism do not affect the great body of the American veterinary profession, they constitute a thorn in its side which is very difficult to quickly pluck while dupes are found to support them. It is the bounden duty of the profession of the states which they disgrace to compel them by law, if possible, to abandon their practices or close their doors.

THE PROPOSED VETERINARY SCHOOL AT CHICAGO.

When in December the news was flashed over the wires that the packing interests of the Union Stock Yards in Chicago had

offered the University of Illinois a quarter of a million dollars to erect buildings and equip a great veterinary college for the especial training of inspectors for the Bureau of Animal Industry, it but confirmed the rumors in well-informed circles ever since the great upheaval of the late spring. Indeed, the *Breeder's Gazette* gave voice to the movement as long ago as July, and the REVIEW reprinted an editorial from that journal in its August number in which the very school which is now taking definite form was foreshadowed. In order to place our readers in possession of all available facts concerning the establishment of this school, the REVIEW sought the assistance of its special correspondent in Chicago, Dr. B. T. Woodward, of the Bureau of Animal Industry, and the results of his investigations will be found in a letter in this number, in the department of "Correspondence."

While it is stated that the primary object of the packing interests is the making of inspectors whose training shall be beyond criticism, it is certain that the University authorities will see to it that facilities are provided for the training of these men for all phases of veterinary science. It is quite out of reason to presume that the State of Illinois, one of the largest, if it does not stand first among the stock-raising states of the Union, will contribute the necessary funds to perfect men for the service of the National Government alone. She will take advantage of the generosity of the Stock Yards interests to equip a great veterinary school for the purpose of securing trained veterinarians to guard her vast live-stock industry.

And thus, as a result of the movement started through the sensational writings of a novice, we are to have in the heart of this great country, with the unexampled facilities of the largest abattoirs in the world, a veterinary school that will rank with the best of Europe, and, as is characteristic of aroused America, may eclipse every veterinary seat of learning on the earth. It may come to pass that, instead of villifying the author of "The Jungle," the veterinary profession at least may rise up and call him blessed.

ANATOMICAL GIFT TO THE NEW YORK-AMERICAN VETERINARY COLLEGE.

The splendid museum in connection with the above college, collected largely through the efforts of Prof. Liautard and the alumni of the school for the past thirty years, and which is undoubtedly the most extensive and valuable collection of specimens illustrative of comparative anatomy and pathology in America, has received a notable addition through the generosity of Mr. Oliver H. P. Belmont, of New York, who last month sent to the College as a gift a magnificent life-sized *papier maché* model of a horse. It was purchased for Mr. Belmont in Paris some years ago by Dr. J. Elmer Ryder, and is enclosed in an ornamental iron-framed, brass-trimmed, plate-glass case, which preserves the specimen in excellent shape. It is a most complete anatomical reproduction of the horse, and is detachable in 928 segments.

Such splendid generosity is of great service to veterinary science, and is thoroughly appreciated by the profession of the country, and the donor will always be remembered for his munificence and public spirit. The opportunity remains for some humanitarian philanthropist to bestow upon this grand old school, which has struggled unaided for so many years and to such good purpose in building up veterinary science, an adequate home for its fine museum, and for another such individual to endow it with sufficient funds to make it independent of student fees, and thus establish in the metropolis of the Western World a great veterinary department under the sheltering wings of New York University. No grander opportunity for doing good to mankind and the animal kingdom will present itself during the twentieth century.

TO ERADICATE THE SOUTHERN CATTLE TICK.

We are pleased to note that the good work inaugurated by the last Congress in appropriating a small sum (about $82,000) for the above purpose, is to be taken up with more vigor at the present session. Congressman Joseph E. Ransdell, who suc-

cessfully piloted the previous bill, has introduced a more pretentious measure in the House, by which the sum of $250,000 to fight this pestilence to the cattle industry of the Southland is appropriated. It is estimated that the tick causes an annual loss to the states south of the quarantine line of $40,000,000, and it is tardy justice to this section to make even the most strenuous efforts to drive the ticks from the infested herds and pasture lands.

INFECTION THROUGH INTESTINAL TRACT.

An important report by special investigators of the Bureau of Animal Industry (Drs. Schroder and Cotton) has been made public during the past month in which it is clearly shown that the food products obtained from cattle—particularly milk—are the most prolific source of human tuberculosis. This simple statement is sufficient to add the greatest weight to the contention of veterinary scientists upon some important points: That bovine tubercle bacilli are capable and do produce tuberculosis in the human family; that infection does occur through the ingestion of the milk and flesh of these animals; that the conclusions of Prof. Koch before the London Congress were wholly wrong; and that all animals reacting to tuberculin should be rigidly excluded from herds furnishing milk for alimentation.

SEASONABLE FELICITIES.

The REVIEW gratefully acknowledges the receipt of many letters and cards from veterinarians all over the world wishing it prosperity for the new year, and expressing the kindliest feelings and interest in the work in which it is engaged. To all of these thoughtful correspondents the REVIEW expresses its appreciation of their greetings, and assures them that their good opinion and words of encouragement are stimulants to greater efforts in behalf of our beloved profession. We trust and believe that the year just opened has in store for veterinary science many triumphs, and much that will result in the uplift of the cause of veterinary medicine.

ORIGINAL ARTICLES.

THE PRESENT CONDITION OF THE ANTITUBERCULOUS VACCINATION AND SEROTHERAPY.

By Prof. G. Moussu, Alfort, France.

(Translated by A. Liautard, M.D., V.M., from the *Recueil de Médecine Vétérinaire*, Nov. 16, 1906.

When, a year ago, at the end of the International Congress of Tuberculosis, Prof. Behring solemnly announced that he hoped to be soon able to handle with efficacy the terrible disease, tuberculosis, the feeling raised by such declaration was almost as great as the one that followed Prof. Koch's announcement, some fifteen years ago, that in discovering tuberculin he had also found the specific remedy to tuberculosis. Coming from an authority like Prof. Behring, such feeling was to be expected. Having established the principle of antidiphtheric serotherapy, there were good reasons to believe in his promises. Time has gone by and the specific remedy so loudly announced has not yet been found! Let us hope for the future; nothing is impossible. If it is not for to-morrow, perhaps for a near future.

A few months after, it was no longer the question of the cure of tuberculosis which was spoken of, but simply that of the antituberculous vaccination of cattle.

For several years Behring has predicted that he had found the antituberculous bovovaccination and that the time had come to see what services the method might render to the raising of cattle and with what profit to the agricultural world.

Here again time has gone by and the method has been controlled in most of the countries of Europe, and, for those who know how to interpret, there is a uniformity in the results which leaves no doubt.

The actual method of antituberculous bovovaccination is inefficacious and without practical value.

It is important to say it, and not to forget it, in the presence of the affirmations that have been produced and repeated for

eight or ten months in veterinary, agricultural, medical and other publications.

At any rate, there is no need of great astonishment, as this conclusion can only surprise badly informed or incautious persons.

The fault lays on the premature publication of apparent results, whose interpretation, to my ideas, had been absolutely inaccurate. I refer to the experiment of control, carried out in France and known as the experiment of Melun. Let us glance at the principle of the vaccination of Behring and to what has been done at Melun.

The bovovaccine of Behring is made with a culture of human tuberculosis, which he declares is but little virulent, but not as avirulent as it has been said. The technic of the vaccination has been modified since it has been introduced. Primitively (1902) the author recommended for intravenous inoculation doses of two milligrams of active virus for the first vaccine and of five milligrams for the second, inoculated one month apart. In 1904 these doses were raised to four milligrams for the first and to twenty milligrams for the second vaccine, inoculated always in homogenous emulsion in the veins, but after twelve weeks a part only. It is by this last method that the young animals of Melun were vaccinated, after being submitted to a test of tuberculin to be sure that they were free from tuberculosis. Then the animals were divided into three lots: the first to receive the *testing inoculation* by intravenous injection, the second by subcutaneous injections, and finally the third to be submitted to the only test which could have a practical value, namely, the long contamination by cohabitation with animals affected with open tuberculosis.

All of this was to be carried out with non-vaccinated witnesses, selected under conditions as identical as possible as far as age, breed, general condition, etc.

The test inoculation for the first and second lots was carried out three months after the second vaccination, in June, 1905, with doses of virulent cultures of bovine tuberculosis mathe-

matically measured by Prof. Vallée. The duration of the observation was six months and that part of the experiment ended in December, 1905.

What were the results? To all appearances, very brilliant; in reality, middling, when the facts are examined closely. Before the testing inoculation, the vaccinated were submitted to another tuberculination: one only reacted positively, and consequently giving rise to the supposition that he had been tuberculized by the vaccine.

Put aside and killed in December, 1905, he was found entirely free from disease. From this case and from those resulting from the negative reactions before the testing inoculation, it was very properly concluded *that the bovovaccine (used at Melun) had at least been inoffensive.*

To-day there are doubts, from the fact that the virus has not always been of an even fixity; the vaccine might be dangerous, as it was said in Germany some time ago.

This is of no great importance, as will be seen later on. At the slaughter of the subjects of the first series, those inoculated by intravenous injections, *four out of six* of the vaccinated presented nothing visible to the naked eye; in exploring the viscera or the lymphatic glands, two had small lesions of the gland of the posterior mediastinum; in one of the bronchial and of the mediastinal in the other.

With the witnesses, three had died with acute tuberculosis during the experiment; the three others, as was expected, had marked lesions of visceral tuberculosis.

The result for the vaccinated was neither perfect nor absolute, but *the apparent efficacy of the vaccine seemed undeniable.*

With the subjects of the second series, inoculated under the skin, the results were as follows:

For the witnesses, the infection extended as far as the lungs in five among them; with the two others it did not go beyond the entrance of the chest.

For the vaccinated, this infection remained in appearance localized to the point of inoculation with four of them; it

reached the prescapular gland in two, and slightly touched those of the entrance of the chest in one.

Again, then, *immunity seemed to be undoubtedly conferred by the vaccination*, although not so marked as in animals of the first series.

At that time, say towards the end of November, it had been suggested, among the members of the Commission, to kill all the animals in the experiment, without exception. Financial reasons were advanced, and for some members the duration of the experiment had been sufficient to have final results.

Prof. Vallée and I [Prof. Moussu] were of a different opinion, and I insisted, especially for the animals of the third series, those of the vaccinated, which it was proposed to contaminate by long cohabitation with animals having open tuberculosis. My opinion rested upon personal experiments and their results, which I made public at the Congress of Tuberculosis, and which were the results of four years' observations. Anyhow, it was for me the only part of the experiment which had a capital value, as it alone responded to the natural conditions of transmission of the disease. My suggestions were adopted; the vaccinated which were to be contaminated by cohabitation were not killed, and I can say to-day how pleased I am in having obtained that, otherwise the French experiment of control would have committed one of the greatest errors.

After the slaughter of the animals of the first two series in December, 1905, the rumor, indeed, was spread that vaccination of large cattle against bovine tuberculosis was a definite fact, and it found its way into veterinary, agricultural and medical papers, and even to the public at large, with the results that the promises of the German professor to deliver soon a curative remedy were hopefully expected.

To tell the truth, I must say that, nevertheless, the conclusions of the reporters of the experiment (Prof. Vallée and Mr. Rossignol), were less affirmative, they having only said that in the cases of the animals tested by venous and subcutaneous injections:

(a) The vaccination according to Behring's method is inoffensive for the animals kept during the time necessary for the immunization and the six consecutive weeks, when kept away from all accidental cause of infection.

(b) The method confers a resistance, truly considerable, to the most severe modes of experimental infection.

(c) The immunizing bacilli used by M. von Behring constitute true vaccines.

Against these conclusions and against the exaggerated optimism which is presented to those who are interested in the question, I will make the following remarks:

I desire to make some reserves upon the very interpretation of the facts observed and not discussed. Like my colleague, Vallée, I took at the time of the slaughter a certain number of samples of glands from the vaccinated subjects, to find out if, as I suspected already, these glands, in appearance healthy, did not contain living and virulent tuberculous bacilli. I took of each one only a small quantity, from one to one and a half grams, which was triturated with boiled water and inoculated into the thigh of guinea-pigs. These guinea-pigs became tuberculous and died in eight or ten weeks—result similar to that obtained by the reporter.

For the vaccinated, tested in the veins, I took glandular samples: from No. 78 the bronchial; from No. 79 the mediastinal; from No. 80 the mediastinal. These glands which seemed healthy, contained then also virulent bacilli and that in sufficiently large numbers, the quantities of substances used being very small.

Assuredly, it is incontestable that these were the bacilli of the testing inoculation, spread a little all over by the circulatory current and arrested in the thoracic glands. But I repeat that, for me this is a very alarming constatation, justifying certain reserve.

With the vaccinated, tested under the skin, I made my collection of samples in such a way as to have pulps of glands of the first, second, and of third degrees—that is to say, I took

from No. 35 the prescapular gland; from No. 36 the bronchial, and from No. 38 the mediastinal gland. All the guinea-pigs inoculated with these became tuberculous, like the preceding, and in the same length of time.

If the presence of bacilli of the testing inoculation is explained in the thoracic glands in animals tested, through the veins, it is a little less comprehensible for the animals tested under the skin, and for me, I repeat, this justifies reserve.

Your reporter thinks that there is no reason to attach great importance to these facts, because in the practice of vaccination, the vaccinated animals shall not be tested with inoculations in the veins or under the skin.

This is understood, but this testing inoculation shall be made under the form of contamination, either by the intestines or the respiratory tracts, if you place the vaccinated in a contaminated district—that is, where only the usefulness of the vaccination shall be real; and it is proper to ask, then, if these vaccinated will not entertain within themselves, and even for a long time, as at Melun, living and virulent bacilli in their pectoral, mesenteric and other lymphatic glands.

A first point, which is not contestable for the experiments under consideration, is *that six months after the vaccination, the bacilli of the testing inoculation had not been resorbed.*

Your reporter thinks that these bacilli will be resorbed in time, and that there is nothing surprising, as the vaccine itself takes a long time to be resorbed.

How do you know? It is not the reported experiments which demonstrate it, and, if I have some anxiety, it is because it is known that *the effects of vaccinations ordinarily diminish as the time of the vaccination gets further off.* Then, if it is the same for tuberculosis, what is it which will prove that these bacilli (or those that might penetrate by the digestive or the respiratory tracts) will not remain in latent life, until any organic depression may promote their evolution?

A second point seems to me deserving of some considerations in relation to the vaccinated, tested under the skin. Undoubt-

edly the vaccination has not been sufficient to immobilize at one place the bacilli introduced in the neck, as they have been found at some distance and as far as the glands of my samples of the third degree. Has there been simply a bacillar transport at some distance by the white globules? It is possible, but it is not proved, and one has well the right to ask if there has not been bacillar multiplication and very slow invasion all around.

These facts seem to me to impose very serious reserves, which time only will give the proof of, and of which it is premature to try to explain, with reasons that one would wish to be sure.

What pushes me towards these reserves is the current teaching of human tuberculosis, and I will say more, the teaching of the forms of human tuberculosis which pass as the least serious, the easiest to cure.

Let us take, for example, a child affected with coxalgia without other detectable lesion. He is treated, immobilized, put in plaster, submitted to excellent hygienic conditions, and after one or two years he seems cured. He returns to ordinary life. Five, eight, ten years later, the lameness reappears, the old trouble wakes up, and the lad has a suppurative centre at the old lesion. The bacilli, which were believed gone forever, had remained in latent life during years, to resume a new vitality under an influence which most commonly passes unnoticed. For vertebral tuberculosis, or Pott's disease, it is the same, and the facts are numerous. I will mention only one as example. It is that of a wealthy man, free from the material cares of life, who in his youth had Pott's disease, which seemed to be cured. *Fifty years after*, when sixty and some odd years old, he had a cold abscess of his old Pott's disease. This is a case, and a lesion in which the bacilli had had time to be destroyed, as the conditions of life had been most favorable to a final recovery, and yet this had failed to take place.

And, again, with glandular tuberculosis, recoveries are only apparent. I will mention the case of a young woman that I have known for twenty years, who, having had tuberculous

adenitis of the neck in her youth, appeared perfectly and completely cured under the influence of eminently favorable hygiene and conditions of life. She got married while in the best condition of health, became pregnant, had a slight complication of phlegmatia alba dolens, and a few weeks after, ten years after the disparition of the cervical adenitis, these returned as big, as serious, as alarming as before.

Similar facts are observed daily ; there is not a physician who has not many such observations in his record book. Therefore, it is my opinion and I ask, if under these conditions the reserves that I have made upon the interpretation of the experimental conclusions were not widely justified.

Because vaccinated animals have not, during a period of six months, been able to resorb the virulent bacilli that they were inoculated with, it is right (I repeat it again) to ask if these bacilli would not develop and make lesions, if the animals were under the influence of any organic depression such as gestation, lactation, bad alimentation, intercurrent disease, etc. That which seems to still more justify my doubts is that the only vaccinated animal that seemed to be quite well, although he carried little lesions of broncho-pneumonia, became tuberculous.

I have hope in that vaccination, but I consider that it is premature to affirm to-day that it is practical.

Time will complete our instruction.

* * *

These observations, expressing without restriction my personal doubts, rested on indisputable data, on the different results obtained in foreign countries, and a little also on private researches, of which I will speak further on.

My colleague, Vallée, answered for these observations that there was no need to establish comparison between the altered virulent lesions, so-called cured, such as those that exist in coxalgic or Pottic individuals, and the glands, free from any constituted lesion, of the vaccinated animals against tuberculosis.

The differences of opinion still persist, because what appeared to me dangerous was the presence of living and virulent

bacilli; but I believe I remain alone in my incertitude, so pleasant it is to live with a new hope, even if unfounded.

However, I wished I had been in error, and it would, indeed, have been very desirable; unfortunately, the facts show me right. The portion of the experiment relating to the vaccinated that had been kept to be submitted to long cohabitation with individuals having open tuberculosis, has proved decisive and the results disastrous. One year of cohabitation and they were tuberculous: it means that the practical result of the Behring vaccination does not exist.

A first vaccinated animal, killed July 6, 1906, was tuberculous, with serious lesions of the bronchial, mediastinal and mesenteric glands and also pulmonary lesions.

A second, placed during six months in contact with an animal not very contaminating, has had glandular lesions, less marked than the other, which is not astonishing with the conditions of the experiment, but still certainly tuberculous, as proved by inoculations to guinea-pigs.

Finally, another vaccinated intravenously, tested by intravenous injection, one year after vaccination and kept since, died with generalized tuberculosis.

It would be useless to insist any more and to furnish more details which would show better the defects of the method.

Only one conclusion remains: *At the present hour, with the method of Behring, no practical antituberculous vaccination can be made.*

One will understand of what little importance it is now to discuss the duration of the immunization or to inquire what will become of the vaccinated in practice. I will not even agitate the question to know if, yes or no, the Behring vaccine can itself alone give rise to the evolution of lesions, as it has been recently advanced. All these, in my opinion, are without interest and of no importance; and as long as the method is no good, it had to be improved or another looked for.

Well, as I have already said, is there anything that can make this conclusion really surprising? No; the result was nearly

expected. Anyhow, it was only necessary to take into consideration what had been done and obtained in foreign countries, so as not to be carried away into unjustifiable expectations.

I will not and I could not report here all that has been said on the subject, but I must, however, give at least a general opinion.

In Germany, Lorenz, one of the first, lent the authority of his name to the method of the immunization of Behring, although his observations would not escape strict critics; but, from 1904, serious doubts were already expressed on the efficacy and on the innocuity of the vaccine, as shown by some conclusions adopted by the Congress of Naturalists of Breslau.

Klimmer (1904–1905) states that the practical attempts to vaccinate with the method of Behring have been followed in a great number of calves by tuberculous lesions.

Marks (1904) affirms that calves have died by accidents of inoculation.

But the authority of the men who were heading the movement was such that researches were kept up quietly, giving notwithstanding rise to comparatively favorable publications. Among those I will mention two of the most recent, to show how much opinions will differ, when comparison is made with what is published in different countries.

Strelinger (1906) who, during three years, has made observations in the domain of Prince Louis of Bavaria, is a convinced advocate of the method of Behring, and for him it is efficacious; but, besides, *it seems as if it can cure beginning alterations of tuberculosis!* And to justify his assertions he states that calves, that had primitively reacted to tuberculin, did not react after vaccination. This justification is insufficient; autopsies would be necessary, and it would be too good and perhaps asking too much of the vaccination, if it was so. At any rate, it would be contrary to what is known on the question of vaccination.

Romer, who may be considered as the voice-carrier of Behring, is much less affirmative. He says: "The method has not the pretention of conferring a high degree of immunity, allow-

ing bovines to resist to all kinds of inoculation, but has no other object than to allow animals not to contract tuberculosis in natural conditions. The results of rural practice only will allow to appreciate the entire value of the method."

Certainly we would not ask more, and it could be called perfect if it did answer to this simple promise, but in France it is just the animals that were submitted to the contamination by cohabitation which after one year only became tuberculous. In Belgium, with much less time, one of the vaccinated of the testing experiment became contaminated in the same way! Those were certainly natural conditions and the results were markedly unfavorable. To say that one must wait for the results of rural practice to appreciate the value of the method! Oh, no! Because forcibly the conditions of observation shall not be as severe, because the chances of contamination may vary whatever is done, and because it is well evident that if the chances of contamination are less the results will appear excellent without having more value. Could these results, even favorable, be called in opposition to those obtained by severe experiments? No! At any rate, Romer seems to have foreseen this, when he adds that the best results will be given with isolated animals, according to the method of Bang, it being possible to combine both methods.

This is a disguised acknowledgment (it looks so) of an expected and possible failure. Anyhow, is this the present general opinion in Germany? No. Since a year many contradictions have been raised with serious objections, and Behring has defended himself the best he could in taking advantage of the experiments of Melun. It is known to-day to what they are reduced, and, as I have said, they are about in accordance with those obtained elsewhere.

For a long time, Eber, of Leipzig, who was one of the first called to give his opinion on the value of the method, had lost faith, and recently Dammann, of Hanover, said to the Superior Council of Agriculture of Germany that, from all the data so far obtained, none had brought the solution of the problem—namely, that the Behring vaccination prevented tuberculous in-

fection such as might occur in the ordinary conditions of life in cattle.

The French experiments seem to us to solve the question, and *it is positively negative.*

In Hungaria, Prof. Hutyra has not obtained better results in his controlling experiments. All the vaccinated, at the post-mortem, presented tuberculous lesions, smaller, it is true, than in the witnesses, but sufficiently great to have killed one of the vaccinated during the experiment. More recent researches have shown him that, in a contaminated establishment, the percentage of the vaccinated that reacted to tuberculin after twenty months was about the same as that of those not vaccinated; hence the use of the vaccination in rural districts is in no way evident.

In Switzerland, Schlegel, who also had been called to control the method with one of the first animals vaccinated from Behring himself, does not give a more favorable opinion; and I may add, from what Prof. Zangger has told me, faith in the method is indeed very small.

In Italy, the researches of control do not allow the formation of an opinion; but in Belgium half of the vaccinated have presented at post-mortem tuberculous lesions after testing, and one of the vaccinated became tuberculous after five months only of cohabitation with subjects having open tuberculosis. As usual, the vaccinated had lesions less severe than the witnesses, which seems to be the general rule.

It is sufficient, we believe, to compare this ensemble of data to have the conviction that there is uniformity pretty well everywhere and *that the practical vaccination of cattle against tuberculosis is truly not found as yet.* However, is it to say that there is nothing in the method of Behring? Certainly not. But that which may be said positively is that the Professor of Marburg seems to have done no better than the few authors who in late years have worked to find an antituberculous vaccination. He has made a great deal more noise, and that is all.

The subject is not new, indeed, and it is a long time since

jennerization, Behring fashion, has been tried in using bacilli of a specie to transport them to another. Even the limit of what seemed practical in that direction has been resorted to, in using aviary bacilli in attempts at vaccination of mammalia; but the results did not answer the expectations. The use of naturally or artificially attenuated virus, which might have been compared to vaccines, was not followed with better results. And still, researches are going on and will be kept up without arrest until the near day, we hope, when a finally efficacious method will be found.

In America, de Schweinitz, some ten years ago, failed; but more recently, in 1905, Pearson and Gilliland drew the following conclusions from their observations: (1) That immunity is proportional to the number of vaccinations and to the quantity of utilized vaccine; (2) That the attempts of hypervaccination give a resistance *below the normal* to the point of producing a fatal toxæmia; (3) That the resistance of vaccinated, with identical doses, varies from one herd to another; (4) That the immunity conferred may last at least two years (?).

At the present hour, it is announced that Pearson has found a curative remedy for tuberculosis. [Pearson makes no such claim!—*Ed.*] So much the better, if this is finally true! But, before believing, let us wait for decisive proofs.

In Italy, Maragliano, continuing previous work, has affirmed at the Congress of Padua (1903) that it was possible to vaccinate animals with injections of dead bacilli from the peripherical centres, and that animals treated by this method would afterwards support very easily injections of living bacilli which would kill witnesses. It is with this method, more or less modified, that, in his laboratory at Genoa, he succeeded in making a serum which he says possesses an evident activity. Activity does not mean real specificity, and I do not believe that this serum has ever permitted recoveries that could not be looked for with proper hygienic means. To my knowledge, the method is not susceptible to receive an application in relation to practical vaccination.

In France, the most important work done on this question is certainly that of Prof. Arloing. His method differs sensibly from the others, as it is based on a special mode of culture of the tubercle bacillus. In cultivating this bacillus in the depth of the bouillons of cultures, he has proceeded sufficiently far to modify its biological properties and attenuate it to such a point that he hopes to transform it into vaccine virus. The results obtained so far are very encouraging, but, with a prudence that deserves all praise in a question of such importance, the learned professor of Lyon remains reserved for the conclusions to be drawn for the present.

In Germany, Koch and Schütz have more recently recommended the use of virulent cultures, simply diluted in physiological water, inoculated directly under the skin. Immunity would be obtained three months after the second vaccination.

Lignières, in Argentina, has also made attempts with the subcutaneous method. The negative results that it has given at Melun with the testing trial are known; no use to look in that direction.

I have myself, from 1900 to 1904, made many and various trials, and the conclusions I have come to, in 1904, are recorded in the report of the Commission of the Funds for Scientific Researches. They are about similar to those derived from the whole of the considerations above exposed.

With the different methods recommended to this day, *the resistance of the animals experimented with is reënforced, but no practical vaccination is made.*

The booming made around the method of vaccination of Prof. Behring will have for advantageous effects the increasing of the researches in the best fitted laboratories, and, let us hope, bring us nearer a good solution. Calmette and Guerin, starting from the fact that they have demonstrated that many pulmonary tuberculoses were of digestive origin, have thought to obtain an antitubercular vaccination through the digestive tract. With ingestions of bacilli dead, attenuated or deprived of virulency, taken in given doses, a very remarkable resistance

can be obtained. MM. Roux and Vallée (1906) have had, with a similar method, the same results.

Will the increase in the resistancy conferred by this method correspond to an efficacious and practical vaccination? Perhaps. But already it may be asked if the method by the digestive tract will be better than the others. Living bacilli are not modified, or very little, by the digestive secretions while they journey through the gastro-intestinal canal. *A priori*, one cannot well understand why this method would have a marked superiority over the others.

Let time do its work. Let us wait and hope patiently.

* * *

A few words on antituberculous serotherapy before closing.

In relation to serotherapy, fashion was at one time to resort to serum of animals considered primitively as refractory. In truth, all our domestic animals are not equally sensitive to the bacillus of Koch, and while some offer it an eminently favorable ground for its growth (cattle, dogs and goats), the others do it only with resistance (horses, donkeys, sheep). Yet none are refractory in the rigorous sense of the word. I have myself shown how contagion among goats was easy, when a first case occurred in a flock; I have even shown that it was possible, by simple cohabitation much prolonged to transmit it to sheep; others have insisted upon the facility with which dogs would become infected, and every one knows that cases of tuberculosis are not exceptional with horses. It is, then, starting from a wrong principle that in days gone by the serum of goats, of horses, donkeys or sheep was recommended, as the results proved it.

When the properties of commercial tuberculin were known and finally established, the idea came naturally to inquire if its injection in gradually increasing doses to healthy animals would not develop in their fluids a marked antitoxic power, which might be utilized in the treatment of tuberculosis. Failure was complete and absolute. Since that time, already so far away, the result has not varied, no matter what has been done and no

matter what special toxines, isolated by more or less complicated chemical processes, were used. Moreover, even in modifying the conditions of culture, as did Marmorek, it does not seem that products could be made which could either immunize or give birth to the production of an active serum. Maragliano, as I have recalled, asserts that the serum obtained by his method is possessed of an effective action, but no other experimentor of authority has come to confirm his affirmations.

More again, inoculations of aviary bacilli, of bacilli attenuated, scoured, avirulent or virulent from mammalia, as subjects of experiment, have not up to the present time given any hope of the production of an active serum. The last communication on this point is given by MM. Lannelongue, Achard and Gaillard (1906), who believe they have at last obtained with the donkey a serum having a certain activity. Their opinion is based on the fact that the injection of their serum to guinea-pigs, tuberculized beforehand with tuberculosis of little virulency, had, when compared with witnesses, produced very noticeable prolongation of life in the animals treated. But a careful examination of their report shows that those treated did nevertheless become tuberculous, and that if they had lesions less extensive and manifest than the witnesses, it is not a sufficient reason to conclude that the specific activity of the serum is peculiarly weak, as long as the tuberculosis in question was one with exceptionally slow progress. On that side it does not seem that much progress has been made either.

In closing, I may say that I have also had the hope to be able to obtain a serum which would have an antituberculous activity, in realizing my cultures *in vivo*. Theoretically it seemed to me that with these cultures in filters in the peritoneal cavity of animals of experiment, which consequently, would be under the effect of a continued tuberculous intoxication through the filtration of poisons secreted by the bacilli, I would arrive better than by any other way to obtain the natural products susceptible to give immunity. Up to this day, and I have animals which have successive cultures *in vivo* for more than two

years, it does not seem as if my attempts will be crowned with success. The serum that I have been able to obtain has not presented any activity during the first year, and I do not dare say that at the present hour it is real.

Like MM. Lannelongue, Achard and Gaillard, I have obtained, principally since a year, noticeable prolongation of life, in guinea-pigs inoculated experimentally and treated in comparison with witnesses inoculated with the same doses, but I did not prevent them from becoming tuberculous. Consequently this is to say that if my serum has any activity it is very weak.

However, I have an observation that I desire to report. It is that of a small fox terrier, sick since about a year with natural tuberculosis, manifested by clinical signs and an injection of tuberculin, which on October 26, 1905, gave a reaction of 2.6°. For six months this dog has coughed all the time; has no appetite, and has arrived at a great state of emaciation, weighing 5 kilogs.030 on October 12, and 4 kilogs 250 December 7 following. Treated with potions of bromides, opiates and digitaline before I saw him, nothing had done him good. December 3, 1905, I injected in his flank 40 c.c. of the serum spoken of above; the 10th of the same month new injection of same dose under the skin of the back. On the 15th, the cough had diminished in frequency, in a noticeable manner. On 21st of same month, third dose of serum, 40 c.c.; January 10, 1906, again 20 c.c. At that date improvement was very marked, not only by the almost complete disappearance of the cough, but also by return of the appetite. The progressive loss of flesh seems arrested; January 10, the dog weighed 4 kilogs 450 grams. February 1, he again receives 20 c.c. of serum, and the same dose on the 20th. February 1 the weight was 4 kilogs 700 grams, and on the 15th of the month 5 kilogs 100 grams. March 2 having no more cough, he again received 30 c.c. of serum; his appetite was excellent, and he weighed on March 15, 5 kilogs 300 grams. Since that time he has not received any treatment; he was gay and his weight had gone up to 6

kilogs in these last months. At first sight, no one would believe him sick, and yet he is tuberculous, having given on July 11, 1906, a reaction of 2.5° with a new injection of tuberculin. Nevertheless, the favorable action of the serum seems undeniable, and at the present hour the good condition of health persists.

But with all that, I only conclude that the action of the serum must be very weak, if one takes in consideration the doses injected in proportion to the weight of the animal. I have never dared to make a similar attempt with a tuberculous human because, taking in consideration the proportionality based on the weight, quantities of no less than 200 cubic centimeters for doses or even every week, would be altogether impossible to realize in a practical point of view.

What, then, must be the conclusion from all that we have seen? The final result is certainly not brilliant and responds but little to the expectations promised by the loud and erroneous publications in political papers. Believing them, one at some moments could have fancied that it was as easy to vaccinate against tuberculosis as against small pox. It seemed as if the difficulty would have been only on the selection of the method to use.

Let us sincerely acknowledge that the method is yet to be found, for vaccination as well as for the treatment, and let us wish for those who suffer with the disease for a brighter and more hopeful future.

AN Oklahoma paper relates the following incident as proof that a bird dog does not point by scent alone: A very intelligent setter came to a dead stand on a shadow of a wee swallow in the street, which was reflected from a telephone wire upon which the bird was sitting. The dog made a beautiful, patient stand that would have delighted the heart of a nimrod. After a long time the setter crept carefully up to the shadow and put his foot upon it. When he found out that he had been sold he crept silently away, and when you looked at him he would hang his head down in shame, with an apologetic grin, as if to say: "If you were a dog you would have done it, too."

ARECOLINE COMPARED WITH ESERINE IN THE TREATMENT OF EQUINE COLICS.

By Dr. W. H. Weathers, Watseca, Ill.

Presented to the Meeting of the Illinois State V. M. A., at Chicago, Dec. 4, 1906.

I have selected this subject, not for the purpose of introducing anything new in the treatment of colics, neither is it my intention of adding anything new to the therapeutics of these drugs. But, for the want of a better title to a review of my limited experience with the use of these agents in the treatment of impaction of the bowels and intestinal flatulence, I have given to my paper the above appellation.

To get down to practical facts, I have recorded a few of the cases experimented upon with each of these drugs.

Hearing and reading so many very gratifying reports from practitioners in the use of eserine in bowel affections, I went into the field very much pleased that such a quick cathartic could be employed in these cases. I therefore promptly began the use of eserine, and my first case was a brown draft mare, 8 years old, weighing about 1500 pounds. Was called Jan. 7, 1906, and found her presenting symptoms of impaction of the bowels. I saw her about 9 A. M.; owner said he found her sick when he got up that morning. I gave her 1 gr. of eserine sal. subcutaneously. In about five minutes she became uneasy, straining considerably, and going through the usual performances when eserine is given, with the exception that no flatus or fæces were passed. After about one hour the effects of the drug subsided and she was about the same as when I found her. No peristalsis perceptible. Raw linseed oil, carbonate of ammonia and nux vomica were administered at regular intervals until the following morning, when a second dose of eserine was administered—this time 1½ grs., by the trachea. I got the same results as before—a violent shaking up of the muscular system, but no passage. Went on with the oil and stimulant treatment, but could not get any peristaltic action. The mare died

about 48 hours after I found her, and post-mortem examination revealed a pretty severe case of impaction of the colon, but did not seem worse than an average case.

The next form of digestive trouble with which I tried eserine was a case of intestinal flatulence, in a bay draft mare, 12 years old, weight about 1600 pounds. Was called January 14, 1906, and found her very tympanitic, but did not think it necessary to use trocar at first. I gave 1 gr. of eserine by the trachea, hoping to relieve the bowels of some of the gas.

The drug acted upon the muscular system about as usual, and again no action of the bowels nor the expulsion of any gas. Used the trocar, gave salicylate of ammonia with other carminatives and antiferments, but there seemed to be no possible chance of escape for the gas by the rectum. This mare died about 16 hours after finding her, and post-mortem examination revealed diffused enteritis and the intestines very much distended with gas.

These are each about the typical cases of digestive derangements in which I have tried eserine, and have utterly failed in every case where I employed it. I used eserine on at least a dozen cases in succession and lost all of them. Most of the cases were impaction, but some were intestinal flatulence.

I became discouraged with the results and for some time resorted to slower and milder forms of treatment, with a fair amount of success. After using the milder forms of treatment, and passing many nights of slow worrying along with these cases, I partly recovered my shock from eserine, and decided to try arecoline, with still hopes of finding a quick cathartic with which to hasten the removal of some of the bowels' burden without having to wait so long.

My first case to try arecoline on was a gray Western gelding, 9 years old, weight about 1300 pounds. Was called at 9 P.M. and found him pawing, getting up and down, some tympany. I had treated this horse before and knew he was very hard to drench, being one of the worst Western kind; so I gave 1 gr. of arecoline subcutaneously, and in about 3 to 5 minutes sali-

vation began, followed by straining and uneasiness. He was taken out into the yard, where he rolled considerably, passing fæces several times and flatus almost continually. In about 45 minutes all tympany had disappeared, and he was as gaunt as if he had been driven on a hard drive.

Another case was a roadster gelding, 10 years old, weight about 1100 pounds. Had been driven 20 miles and refused food on arriving at the end of the journey. Was called about 11 A. M., but could not see him until 5 P. M. Found him uneasy, some tympany, but very little; pain of a subacute character, being what looked to me an all-night case. I administered 1 gr. of arecoline subcutaneously, and gave an injection of glycerine. The drug acted promptly and he passed fæces three or four times, some gas, and in less than an hour I was on my road home.

A bay mare, 11 years old, weighing about 1400 pounds, seemed to be suffering with impaction of the bowels. Owner stated had been running on corn stalks and had been sick three days. Had had about three pints of raw linseed oil when I saw her about 2 P. M. I gave her 1 gr. of arecoline, and got some fæces promptly and quite a little peristalsis. I followed with stimulating treatment, and the animal recovered in a few days.

Recently I was called out at 9 P. M., owner stating over the 'phone that he had a very sick mare. On arriving I found a gray draft mare, 9 years old, weight 1600 pounds. She was down and bloated very badly. My first thought was my trocar, but a second thought prompted me to try arecoline first. I administered 1 gr., and in about five minutes she began passing gas. This was kept up almost continuously for some time, when she became easy and, as the owner expressed it, "down about her right size." She was given a mixture of cannabis indica, sulphuric ether, oil turpentine and soda hyposulphite. I returned home and had no further trouble.

These are a few of the cases as I have found them, and the results obtained from each of these drugs. The one has been a

complete failure with me, the other very gratifying in its effects.

Have I been unfortunate in finding a series of fatal cases while using the one, and fortunate while using the other? Or have I not administered the eserine properly? This is what prompted me to write this paper.

A LARGE NUMBER OF VETERINARIANS from various sections of the country, particularly from the West, attended the International Stock Show in Chicago in December.

WHAT'S THE USE?—It is estimated that shipping sickness and complications growing out of that ailment cause a loss of $150,000 annually to dealers in horses in New York. Scarcely a sales stable escapes its ravages, and despite the employment of the best veterinary talent, with well-equipped hospitals for the care of sick horses, some of the larger establishments lose heavily. To find an effective cure or preventive of shipping sickness has been the constant study of horsemen. Little success has attended their efforts, however, unless C. Berg, the manager of Fiss, Doerr & Carroll's Brooklyn branch, is right in his belief that he has solved the problem. Mr. Berg lost his full share of horses until last July. Since then not one has died—a remarkable record in a stable where green ones are coming in at the rate of a carload a week all through the busy season. The Brooklyn dealer attributes his immunity from loss to a course of treatment prescribed by a tramp veterinary surgeon who wandered into his stable last summer in search of an odd job. The man was a wreck himself, but he proved his knowledge of medicine by curing in forty-eight hours a case of pneumonia which had been pronounced hopeless by the veterinarian regularly employed. He told Mr. Berg that he had been with the British army through the Boer war in Africa and had there learned the secret of successfully treating horses for shipping sickness. He was given a trial and he "made good" so completely that Fiss, Doerr & Carroll's representative finally fitted him out with a new wardrobe and paid his fare back to England in consideration of learning the treatment. Since then Mr. Berg has dispensed with the services of a veterinarian and has scarcely had a sick horse. He says he does not wait for the green ones coming in from the West to get sick, but gives them the remedy on arrival, and always with good results. —(*New York Herald, Dec. 30.*)

MODERN VETERINARY METHODS.*

By Walter J. Taylor, D. V. M., Ithaca, N. Y.

DIFFERENTIAL DIAGNOSIS.

GLANDERS.

The earliest recorded reference to glanders is found in the writings of Aristotle, who describes a disease of the ass under the term *melis*. The description is meagre, but the same author has been credited with a knowledge of farcy owing to his statements that horses develop abscesses.

In the writings of the next six centuries no reference to glanders or farcy has been found, and the disease is next mentioned by Apsyrtus, who lived during the fourth century of the Christian era. Apsyrtus described four forms of the disease; moist, dry, articular and subcutaneous. It is probable that the first of these was what we know as glanders and the last farcy. He believed that the disease was contagious and recommended the segregation of affected animals, but described it as an easily curable disease.

Glanders appears to have been known to Hippocrates, who was a contemporary of Apsyrtus. He is said to have pronounced the disease incurable during its advanced stages.

Vegetius, who wrote a century later than Apsyrtus, seems to have distinguished glanders by terming it *malleus*, and farcy under the name of *humidus farciminosus*. It is interesting to note that Vegetius recognized the contagiousness of glanders and recommended the isolation of the suspected as well as the actually diseased animals.

Glanders and farcy are mentioned in the writings of various authors during the next ten centuries. Fitzherbert was the first English author recording observations on the subject. In 1523 he described both glanders and farcy. Markham in 1662, Solleysel in 1667, Gibson in 1751, and many others in the latter part of the eighteenth century have written descriptions of glanders and farcy, but they all treated them as two distinct diseases.

Erik Viborg, writing in the latter half of the eighteenth century, appears to have been the first to contend that glanders and farcy had a common contagium. He showed by experi-

* This series of articles was begun in the December Review, the first installment being on "Diagnosis;" that for January treated of "Differential Diagnosis," with "Tuberculosis" as the special subject.—[Editor.]

mentation that the two diseases were identical as regards etiology.

The specific cause of glanders is now known to be *Bacterium mallei.* It was first isolated and carefully described by Loeffler and Schütz in 1882. This organism is found in the recent nodules, in the discharge from the nostrils and in the pus from the specific ulcers.

Symptoms.—Two forms of glanders have been recognized, namely, acute and chronic.

Acute Glanders.—Acute glanders is common in the ass and mule, but rarely encountered in the horse. The period of incubation is short. The attack is heralded by a chill, followed by an elevation of temperature, and a profuse mucopurulent sticky discharge from the nose. This discharge may or may not be streaked with blood. If unilateral the margin of the nostril swells, the mucosa is dark red, infiltrated, marked with pea-like, yellowish elevations with red areolæ, becoming eroded in a few days and forming spreading ulcers. The submaxillary lymphatic glands on the affected side become enlarged. Often, however, a uniform swelling of the intermaxillary space takes place. The course is rapid and death ensues in from the sixth to the fifteenth day. This form rarely if ever becomes chronic.

Chronic Glanders.—This form of glanders seems to offer the most difficulty of correct diagnosis, inasmuch as the lesions may be of a latent character and misleading to a large degree. From an economic point of view, a correct diagnosis of this form is of far greater importance in sanitary work than the acute type, as it is the chronic cases, as a rule, that play the most prominent part in the spreading of the contagion. If the patient is well fed and cared for and not overworked, the malady may run a course of three, five or seven years, and the victim may pass through many hands, leaving infection in every stable it occupies.

In chronic glanders the nasal discharge may be not unlike that of the acute type. On the other hand, in some indolent cases the nostrils may be clean, but if there is matting of the long hairs, or adhesion of the alæ nasi, the case is especially suspicious.

The nasal mucosa is usually congested, of a dark reddish color and sprinkled with superficial or deep ulcers, clean or covered with crusts. Another lesion frequently observed in indolent cases is a cicatricial white spot or patch in which a slight hyperplasia has taken place and which might be mistaken for

glanders, but which shows no tendency to ulcerate. The mucosa may be drawn or puckered at this point, making the illusion all the more complete.

Rarely the submaxillary lymph glands only are diseased. In other cases there is only a cough, the latent lesions being confined to the lungs. In still others, the lesions may be confined to some internal organ. Objective symptoms may or may not be present.

Farcy.—Cutaneous glanders or farcy may be observed in either the acute or chronic form. Acute farcy is liable to show itself in the cutaneous lymphatics of one limb, usually a hind one, in the form of firm cords with degenerating or ulcerous nodules, giving rise to the well-known *farcy buds.* These swellings arise from the lymphatics usually following the course of the veins which are accompanied by the larger lymphatic vessels. In the hind limbs the branches of the saphena are the ones commonly affected, extending from below upward, the first nodules appearing upon the fetlock or the hock.

The chronic type is often less characteristic, yet may be detected by careful observation of the symptoms. The main symptom may be the swelling of a joint. The swollen cord-like lymphatic vessels, in the hind limb, usually follow the course of the flexor tendons on the inner side of the digit, metacarpus and thigh. The cord-like swellings may appear also on the ventral surface of the trunk, and in connection with groups of lymphatic glands may give rise to large intermuscular abscesses.

Differential Diagnosis.

Glanders is to be differentiated from a variety of nasal and lymphatic disorders of the horse kind, such as chronic nasal catarrh, strangles, lymphangitis and the like. As in tuberculosis, if a positive diagnosis cannot be made from the symptoms and lesions in evidence, several specific means are available. Since the discovery of practically positive means of diagnosis, it does not seem wise to speculate upon the chances of a correct differential determination by obscure clinical evidences.

Diagnosis in the Live Animal.—Besides the means already pointed out, we may in case of doubtful diagnosis resort to either the mallein or serum tests, or to animal inoculation.

1. *The Mallein Test for Glanders.*—This is not unlike the tuberculin test for tuberculosis. The average normal temperature of the animal to be tested should be determined previous

to the injection of the mallein. The reaction is as follows: In a few hours there forms at the place of injection a hot, inflammatory swelling. It is very painful and in case of glanders quite large. From all sides of the swelling there may radiate wavy lines consisting of swollen lymphatics, hot and painful when touched, extending toward the adjoining glands. When the mallein injection is made aseptically, this swelling never suppurates, but increases in size during a period of from 24 to 36 hours and persists for several days, when it gradually diminishes and finally disappears at the end of eight or ten days. With the appearance of the local swelling the patient becomes dull and dejected, the eyes have an anxious expression, the coat is lustreless, the flanks contracted, the respiration hurried and the appetite is impaired. Frequent shudders are observed to pass through the muscles of the fore legs and sometimes the trunk is subject to violent convulsive movements. The most active and fractious horses become listless and indifferent to their surroundings. Differences in the intensity of these symptoms are observed, but they are never completely absent.

The temperature reaction never fails to show itself. In about eight hours after the injection of mallein the temperature of a glandered horse gradually rises 1.5°, 2°, or 2.5° F., and even more above the normal. The rise in temperature usually attains its maximum between the tenth and twelfth hour after the injection of the mallein. The reaction persists for from 24 to 48 hours and in some cases the high temperature remains for several days. The temperature should be taken every two hours, beginning at the eighth and going to the twentieth hour after injection. It is often sufficient for diagnostic purposes to take the temperature but four times, viz., at 9, 12, 15 and 18 hours after the injection.

In healthy horses the injection of mallein, even in a much larger dose, produces no effect on the temperature or general condition of the animal. There is produced, however, at the point of injection, a small œdematous swelling, somewhat hot and painful to the touch, but the œdema, instead of increasing, diminishes rapidly and disappears in less than twenty-four hours.

The use of mallein in animals already suffering from an abnormally high or low temperature would be imprudent. The necessary precautions should also be observed that animals be removed as far as possible from atmospheric variations and the influence of strong sunlight, fog, rain and currents of air.

2. *The Serum Test for Glanders.*—A much more convenient and quite as accurate test for glanders is to be had in the serum test. Three very striking advantages are to be found in the serum test, which favor this method of diagnosis:

(a) The animal is not temporarily incapacitated.

(b) It can be used in those cases where there is a rise of temperature, and consequently where mallein could not be safely employed.

(c) The method may be employed, using the blood from the dead as well as the live subject.

The serum test for glanders in brief is as follows: Ten to fifteen cubic centimetres of blood are drawn from the jugular vein of the suspected animal and sent to the laboratory. A suitable culture of *Bacterium mallei* is washed from an agar growth 24 to 48 hours old into a carbolized salt solution and placed in a thermostat at 65° C. for two hours, which kills the organisms. After heating the mixture is filtered through sterile cotton and diluted to the proper consistency, making what is termed the test fluid. The serum from the blood is then diluted to the desired proportion and mixed with the test fluid.* If the suspected blood is from a glandered horse, a reaction occurs at a dilution of 1–800 and higher. If the animal is not glandered, a reaction is seldom observed above 1–400, more frequently lower.

It should be noted that the serum test is strictly a laboratory method. As pointed out by McFadyean in 1896, "it has the advantage of being serviceable on the dead subject." It may therefore be used in cases where a questionable clinical diagnosis has been made prior to the death of the animal.

3. *Animal Inoculation.*—Of the test animals, guinea-pigs and field-mice are the most susceptible. The Strauss method consists in the use of the male guinea-pig for diagnostic purposes. A little of the suspected nasal discharge, the purulent contents of an ulcer or the suspicious nodule may be used. In using the nasal or ulcerous discharge, it is well to mix it with a few cubic centimetres of sterile water or sterile bouillon. From ½ to 2 c.c. of the mixture may be injected intraperitoneally or subcutaneously. In using a suspected nodule, the same manipulations may be employed as pointed out for suspected tuberculosis.

The guinea-pig usually succumbs in eight to ten days when

*The Agglutination Method for the Diagnosis of Glanders. Moore, Taylor and Giltner. AMERICAN VETERINARY REVIEW, Vol. XXX, P. 803. 1906.

inoculated with a virulent organism of glanders. The male invariably shows a pronounced orchitis. A pure culture of *Bacterium mallei* procured from the testicular abscess proves conclusively that the suspected animal was suffering from some form of glanders.

Lesions.—The post-mortem findings in glanders are often misleading. The perceptible lesions found in slaughtered animals which have given a decided reaction to the mallein or agglutination tests may be so slight or so remote that unless one is familiar with the possible location of the lesions a doubt may be entertained as to the reliability of either or both tests. In glanders as well as in tuberculosis it has been found by careful observers that even a very slight lesion may give rise to a decided reaction to the specific tests.

In chronic glanders, the most frequent location of the lesions is on the respiratory mucous membrane, in the lungs, lymph glands and skin. McFadyean states that he has never seen a case of glanders in which lesions were found in which the lungs were not affected. Other organs are more rarely invaded. Circumscribed nodules with the formation of ulcers and cicatrices or diffuse or infiltrated lesions usually occur in the mucous membrane of the upper respiratory passages.

In nodular glanders, which is the common form, the lesions are most frequently situated in the upper portion of the nasal septum and in the cavities of the turbinated bones. In the nodular form the lungs contain nodules varying in size from a millet seed to that of a pea. They are gray by transmitted light, glassy and pearl gray by reflected light, and are surrounded by a congested or a hæmorrhagic ring. By passing the finger over the serous surface of the lung a sensation is imparted much the same as in passing it over a bag of shot. The centre of the nodule shows a pale yellow point in consequence of caseation and disintegration of the innermost cells.

Infiltrated glanders of the lungs form tumors from the size of a walnut to that of a child's head, consisting of a diffuse glanderous infiltration of the alveoli and of the interstitial connective tissue. Frequently on section the infiltrated parts of the lungs resemble very closely a soft sarcoma. They are of a dirty white color, of a gelatinous, juicy consistency, and irregular in shape. They may either become indurated so as to form hard, connective tissue-like new growths, or they may become gangrenous.

In skin glanders (farcy) the nodules are found in the papil-

lary layer. The cutaneous nodules vary in size from a hemp seed up to that of a pea. The nodules in the subcutis are as a rule metastatic tumors varying in size from that of a pea to a hen's egg. In rare cases secondary chronic farcy occurs. It is marked by a large, diffuse new growth of connective tissue with nodular thickening of the skin. This condition is termed glanderous elephantiasis or pachyderma. It chiefly affects the limbs and head. Rarely diffuse gangrene of the skin occurs.

Of the abdominal organs the spleen is most frequently affected. When so affected it contains embolic nodules, which vary in size and either suppurate or become calcareous. Similar nodules occur though not so often, in the liver, kidneys, testicles, brain, muscles, heart and bones.

Structure of a Glanderous Lung Nodule.—The histological structure of a glanders nodule in the lung is quite constant. It usually consists of a central part composed of leucocytes that have filled the air spaces, the walls of which have disappeared as if by liquefaction. This is surrounded by a zone of epitheloid cells. A third zone surrounds this in which the walls of the air vesicles are recognizable. The fourth zone is composed of air vesicles filled with a fibrinous exudate which entangles a few leucocytes. This zone passes gradually into the normal tissue. A peculiar property of a glanderous nodule consists in the disintegration of the nucleus before the destruction of the cell body and the retention of the staining property of the broken, nuclear chromatin. This form of cell necrosis has been designated by Una as chromatolais.

Glanders in Man.—From a sanitary viewpoint, glanders is one of the most important infectious diseases of animals because it is directly communicable to man. Slight abrasions of the skin and especially of the hands have been known to form a channel through which the human subject has contracted this most dreaded malady. The symptoms of glanders in man are of much importance to the veterinarian. Although man's susceptibility to the disease is not very great, cases of human glanders unfortunately occur: It has been especially noted among veterinarians and those having the care of horses. The parts usually first affected are the hands, nasal mucosa, lips and conjunctiva. After a period of incubation of from three to five days, the affected part becomes swollen and painful with subsequent inflammation of the lymph vessels and swelling of the glands. Fever is often the first symptom, and it is nearly

always followed by a nasal discharge, pustules in the skin, ulcers of the oral cavity, larynx and conjunctiva. As a rule, death takes place in from two to four weeks and occasionally in a few days. Treatment is usually of no avail. A few cases purely local in their manifestations have been reported cured by deep cauterization.

(To be continued.)

MARRIAGES.—Dr. Carl W. Gay, D. V. M. (N. Y. S.V. C. '01), of the Veterinary Department of the Ohio State University, was married Dec. 17 to Miss Catherine Emily Andrews, of Columbus, O. . . . Dr. Peter Simonson, President of the Nebraska State Veterinary Medical Association, was married in November. . . . Dr. W. E. Martin, of Perry, Mo., was married Nov. 28 to Miss Cordelia Kirtlink, of Hannibal, Mo.

THE "REVIEW" APPRECIATED IN THE FAR WEST.—A letter from Dr. D. D. Keeler, Salem, Oregon, under date of Dec. 20, says: "Some of our veterinarians are getting along without the best veterinary paper published in the United States, but I cannot see how they do it, and I am surprised how the AMERICAN VETERINARY REVIEW can be furnished so cheaply, with so many good things contained in it. It would have to be more than double in price before I could begin to think that I could do without it. I read and sometimes reread it with a relish, and each time can learn something new and useful. Its standard is high, and I am sure its editors will never let that standard be lowered, but will ever be found raising it higher."

THE PENALTIES OF WAR AND THE REWARDS OF PEACE.—A private letter from Dr. Nelson S. Mayo, chief of the Bureau of Animal Industry of Cuba, thus describes the stirring scenes around the seat of his headquarters at Santiago de las Vegas: "On my return from 'the States' in September, I found myself director *interino* of this station and the place in the hands of the rebels. We had from 200 to 500 encamped here for nearly three weeks. The greatest 'battle' of the campaign (Wajay) was fought about two miles from here. The rebels did but little damage here, aside from stealing a few horses and pigs. Dr. Dimock and I treated their wounded, both horses and men, and when they disbanded we were thanked in 'General Orders Constitutional Army of Cuba,' and the commanding 'general' presented me with his campaign 'machete' as a souvenir of the occasion."

MODES OF TUBERCULAR INFECTION IN WILD ANIMALS IN CAPTIVITY.

By W. Reid Blair, D. V. S.,

Veterinarian and Pathologist, Zoölogical Park, New York City.

When a generally received opinion is made the subject of a careful investigation it not infrequently proves to be erroneous. This is particularly true of tuberculosis among monkeys. The general public holds the belief—and, strange to say, it is sometimes indorsed by ill-informed members of the medical profession—that the majority of all monkeys in zoölogical collections die from tuberculosis.

After careful investigation of the diseases of wild animals in captivity, we fail to find any reasonable excuse for so widely spread an error. There has been entirely too much theory, and too little observation and record of facts in treating wild animals, and it is mere speculation to say from what diseases they might or might not die.

In the absence of the more positive information which one acquires from a long series of experiments designed for the purpose of ascertaining the priority, and manner of invasion of tuberculosis, much of this information, regarding the progress of the lesions, has been gathered from post-mortem examinations of natural cases. This is particularly the case in animals whose price has prevented them from figuring largely in experimental pathology.

As the existence of tuberculosis is determined by the presence of tubercle bacillus, which produces the disease, consequently it is only since the characters of this were made known that we have been able to make an absolute diagnosis in suspected cases.

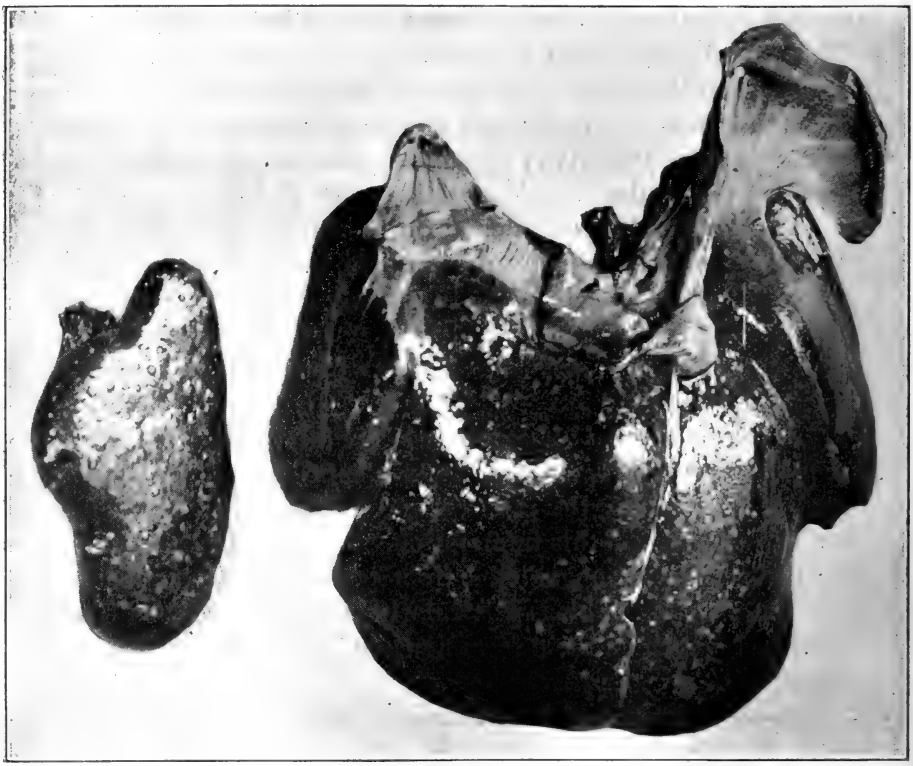
The identity of tuberculosis in human beings and that of certain animals, and the possibility of one infecting the other, renders this disease of the greatest importance.

The great difficulty in determining when the animal first be-

comes tuberculous makes it practically impossible to prevent the possibility of infection to its companions. Particularly is this danger greater among primates, where it is necessary to confine from 6 to 10, or even more, in one cage.

ANIMALS AFFECTED.

While it is quite safe to say that hardly any animal possesses



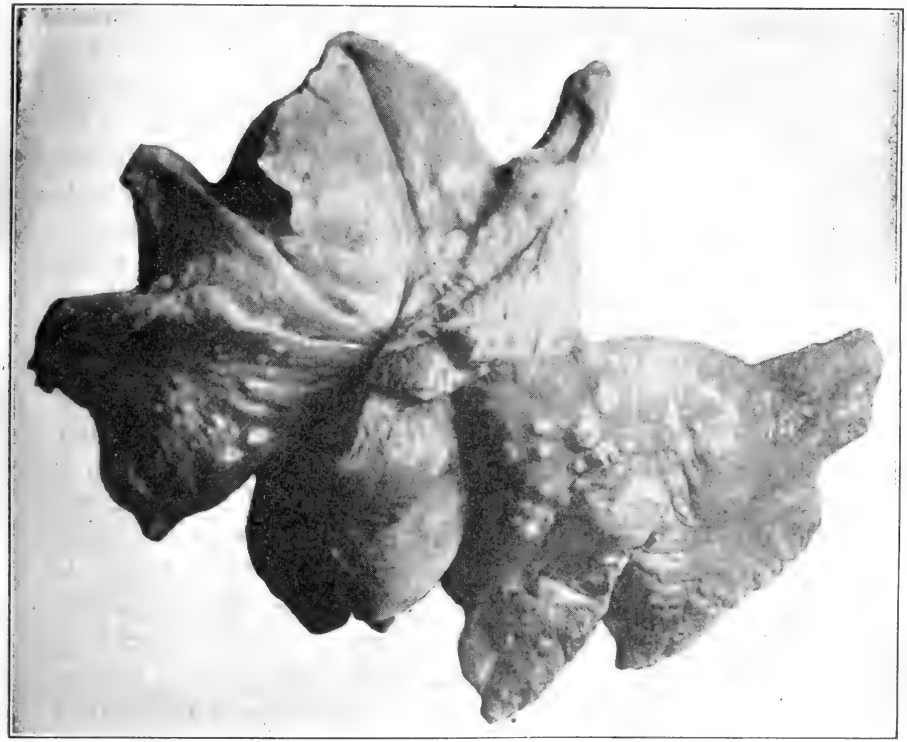
MILIARY TUBERCULOSIS. LIVER AND SPLEEN FROM A MONKEY.

absolute immunity from tuberculosis, certain species and individuals are undoubtedly less susceptible than others.

My investigations from necessity have been confined to the animals in the primate collection, owing to the fact that, with one or two exceptions, the animals in the park outside the primates, have been free from this disease. The experimental

work along this line is not complete, but the facts already gathered are of importance.

The examinations were conducted as follows: As soon after death as possible the animal was opened, the trachea from the larynx to its bifurcation was ligatured at each end and removed. Smears and scrapings were then taken, under sterile conditions,



TUBERCULOSIS OF THE LUNGS. FROM A MONKEY.

from the mucous membrane, 5 to 6 slides used in each instance. A like number of specimens were taken from the nostrils, under the same conditions, at the same time. Smears were taken from the living animals by the means of small cotton swabs applied to the mucous membrane of the throat or nostrils.

Smears taken from the nostrils of suspected cases, and those

that showed no clinical signs whatever, were interesting in demonstrating that at one time the bacilli were present in great numbers, while at other times (intervals of one or two weeks) we find them few in number or wholly absent in the same animal, hence it would seem that too great reliance cannot be placed on the occurrence of bacilli in the nostrils as indicating a diseased animal, for in several instances bacilli were found in the secretions from the nostrils when on careful autopsy no evidences of tuberculosis were found. The bacilli were found to be fairly constant in advanced cases of pulmonary lesions where breaking down of tissue was a distinct feature. Coughing is rarely present among these animals, even in the most advanced cases, but sneezing is quite frequent even in health, and this, it seems to me, is the most prolific source of dissemination of the contagium. Since the bacilli when dried may be carried by currents of air, it is not necessary that healthy animals should come in direct contact with the tuberculous cases to become infected.

Without the *Bacillus tuberculosis* the disease cannot be contracted even by the most weakly animal, but it is equally true that with its presence in a building, or in the body of a companion, the strongest is not absolutely free from the danger of contagion. Notwithstanding the frequency of extensive pulmonary lesion, the trachea, larynx, and pharynx are seldom affected with tuberculosis in these animals. I found lesions in the larynx in only one instance, but in three cases discovered an occasional bacillus within the epithelial cells lining this organ. Some appeared to be in process of degeneration. The bacilli were never in sufficient numbers to give rise to any distinct lesions. Two of these cases had no lesions of tuberculosis present in any part of the body on examination. This fact would seem to indicate that the lining cells of the trachea and larynx possess considerable phagocytic power.

PRIMARY INFECTION BY INHALATION.

In a large percentage of the cases examined the lungs with their lymph glands (especially the nodes situated at bifurcation

of tracheæ) showed calcareous deposits, while other lymphatic nodes were œdematous or in process of caseation. I am led to believe that primary infection takes place, in the great majority of cases, by way of the respiratory tract. It seems to me probable that tubercle bacilli enter the lungs and pass to communicating glands without giving rise to preliminary lesions of the organ with which they first come in contact.

Of the smears taken from different parts of the larynx and trachea, where pulmonary tuberculosis existed, in over 90 per cent. of the cases tubercle bacilli were found in all parts of the tube.

In a small number of cases tubercle bacilli could not be found in the trachea, though the lungs showed far advanced tuberculosis, the tubercles showing calcareous degeneration. In one instance (that of a small macaque monkey), one lung was totally functionless, appearing as a large calcareous mass attached firmly to the costal pleura; the other being only moderately affected; yet the animal was apparently well nourished, as evidenced by the amount of flesh and fat present. In this case I was unable to demonstrate the bacillus in the trachea.

An interesting case was that of a spotted lemur which was slightly injured, necessitating its isolation temporarily in the hospital room. This animal presented a fairly healthy appearance, excepting for the injury, with no clinical symptoms whatever which led me to have the slightest suspicion that the animal was tuberculous. Six smears were taken from the throat and nostrils, all of which showed tubercle bacilli in abundance, those of the throat being particularly numerous. This animal was never again put on exhibition, and I did not have to wait long to confirm my diagnosis, as the animal died within a few days. The autopsy showed far-advanced pulmonary, pleural, and pericardial tuberculosis. No lesions were present in other organs.

INFECTION BY INGESTION.

While one must take into consideration the possibility of

primary invasion taking place by the intestinal canal, through the bacilli taken in with food, or contaminated drinking water, this, in my opinion, is not the common source of infection, but that the intestines and abdominal organs are usually infected secondarily, through the breaking down of tubercular deposits in the lungs, finding their way into the bronchial tubes, finally reaching the throat, the animal swallowing the secretion containing the bacilli in great numbers, some of which would doubtless escape the action of the gastric juices, pass on to the intestines, and if in sufficient number produce tubercular enteritis, or they might pass to the mesenteric glands without producing any lesions whatever in the intestines.

Experimental evidence apparently shows that a relatively large number of bacilli are necessary to experimentally infect healthy animals by ingestion. Probably if the mucous membrane be not intact a smaller number of the bacilli would suffice. The rarity or total absence of tubercular lesions in the stomach would indicate that the gastric juices possess power to prevent the growth of the bacilli.

Specimen smears were taken from the œsophagus at the middle and lower third. Although I have made numerous smears, I have in only a few instances found the bacilli to be in great numbers, and in a large percentage of cases none were present.

The method used in staining was that of Gabbets. After spreading the material in the finest possible film upon the glass slide, a fluid composed of 100 grams of a 5 per cent. aqueous solution of carbolic acid, and 10 grams of absolute alcohol, in which 1 gram of carbo-fuchsin had been dissolved; a few drops of this solution were poured over the film side of slide and heated for two minutes, or until steam arose from the stain. It was then placed for about one minute in a mixture of 100 grams of a 25 per cent. solution of sulphuric acid in which 2 grams of methylene blue had been dissolved. It was next rinsed in alcohol, and mounted in Canada balsam, microscopic examination with 1·12 oil emersion lens used. By this convenient method

the bacilli appear red or pink, and the surrounding tissue blue or greenish in color.

CONCLUSION.

Our observations have been conducted with particular interest in regard to this disease, and we have apparently established certain facts in relation to it. I am fully convinced that the average case of monkey tuberculosis has been contracted before the animals reach us at the Park, contracted either under the unfavorable conditions usual in the quarters of the dealers, or under the still more unhygienic surroundings prevailing in transit—the primary infection taking place generally in the cervical and bronchial lymph nodes, and the extension of the disease usually following as metastases from these foci. This also is, no doubt, the most frequent story in the pulmonary tuberculosis of children, which simulates closely in many particulars the history of the disease as we find it among the monkeys. Pulmonary tuberculosis is by far the most frequent form of the disease as in man, but other types of the disease have been observed, as typical primary intestinal tuberculosis and pure cases of lymphatic tuberculosis. In these instances the lymph nodes and the spleen are the most frequent sites of the disease, the liver and kidneys becoming involved later. Generally cases of lymphatic tuberculosis terminate with pulmonary involvement, though sometimes otherwise, as by tubercular meningitis.

The general character of the lesions produced in simian tuberculosis corresponds very closely to those of the human, and the bacilli found also simulate morphologically those of the human infection. However, no comparative biological tests have as yet been made by us. Chronic tubercular lesions are much more infrequent in the monkey, and the pronounced fibroid changes of pulmonary tuberculosis as found in man have never been observed by me in the monkey; neither does one frequently find healed tubercular lesions in the tissues, particularly in the lungs of these animals, as in man. In man dying of other than tubercular disease, healed tubercles are present in

from 50 per cent. to 80 per cent. of cases. I think we may infer from these facts that the disease is of a much more virulent form in the monkey, and that the rule is death in infected animals, while in man the average case recovers. This observation may be likened to the characteristics of the disease when it affects a primitive people, particularly one in which tubercular infections are infrequent in their natural habitat. We may thus compare the primate tuberculosis to that of the Indians or the Esquimaux in his native land. From this line of reasoning it appears that we shall eventually find that the offspring of monkeys in captivity are less liable to succumb to the infection than those direct from the jungle; that is, of course, assuming the conditions of infection and environment to be the same.

That case after case of acute pulmonary tuberculosis can exist among these animals without the individual showing any visible illness, want of appetite, cough, or even noticeable loss of flesh, up to within a week or less of its death, one can readily appreciate the difficulty in arriving at an early diagnosis from a clinical standpoint.

FOR the two-year-old Percheron stallion Dragon, winner of first prize in his class at the recent International Live Stock Show in Chicago, John A. Spoor, president of the Union Stock Yards, is reported to have paid $5,000 during the exhibition. The price is said to be the highest on record for a draughter of like age.

PROFESSOR THOMASSEN, of the Government Veterinary School of Utrecht, one of the leading spirits of the profession of the world, died the first of the year. Dr. L. Van Es, of the North Dakota Agricultural College, has written to Holland to get full particulars of his life and death to form a comprehensive biographic article for the REVIEW.

DR. D. ARTHUR HUGHES, Veterinary Inspector to the Commissary Department, U. S. Army, Omaha, Neb., the talented REVIEW collaborator, was married on New Year's Day to Miss Henriette Almina LaJeune, at Christ's Church, Chicago. We extend our heartiest congratulations, and trust the year, so well begun, may have nothing but prosperity and happiness for the Doctor and his bride.

QUALITY IN HORSES.

By F. C. Grenside, V. S., New York City.

Paper read before the Veterinary Medical Association of New York County, Jan., 1907.

There is no subject upon which there seems to be more diversity of opinion amongst horsemen than as to what constitutes "quality" in a horse.

It is a term in very common use, but if you ask a number of horsemen what they mean by it you are sure to get a variety of answers. One will say it means breeding; another conformation; another finish; another "class;" another symmetry; another individuality; another an accentuation of all fine points; another magnetism; another refinement of lines, or perhaps a combination of some or all of these attributes. Some say that quality is recognizable but indefinable and unexplainable.

The term "quality" is an abstract one, indicating a special attribute in an individual, just as being well bred, well conformed and possessing finish are attributes of some individuals. When one says that a horse has "quality" one means that he has a special attribute which may or may not be combined with any or all of the others mentioned. Of course there are varying degrees of "quality," so that the term can only be used in a comparative sense. In the light classes of horses it is very often used synonymously with breeding. Certainly the more warm blooded a horse is the higher the degree of quality he is apt to possess; but one may take two equally well-bred thoroughbreds and find one showing evidence of the possession of a higher degree of quality than the other, so that breeding and quality do not mean the same. Neither does quality signify the possession of symmetry, good conformation, finish or "class." A horse may be defective in any or all of these respects, and still possess a high degree of "quality." He may be fiddle-headed, lop-eared, ewe-necked, sway-backed, flat-sided, slack-loined, cow-hocked and calf-kneed, and yet show much "quality."

Much confusion is caused by using the term "quality" synonymously with "class." Horses are spoken of as high class, medium class, and so on, indicating the degree of excellence which they possess for the purpose for which they are best suited. Two individuals can be taken as an example showing equal "quality," but one of them, on account of better conformation, more style and action, may be worth twice as much as the other, consequently he is a higher class individual, although the two are equal in "quality;" so that "quality" and "class" do not mean the same.

If, then, "quality" does not mean breeding, or conformation, or symmetry, or finish, or "class," or a combination of any or all of these, what does it mean? It is an easier matter to explain what constitutes "quality" than it is to give a concise and at the same time comprehensive definition of what it is. It may not inaptly be defined as fineness in contradistinction to coarseness or fineness of texture. How frequently one hears a prospective purchaser say to a dealer, "He is a very nice horse, but very light in bone." The dealer almost invariably replies, "Yes, but his bone is of good 'quality,'" and still further endeavors to make the statement more emphatic by saying that the bone is so dense, so compact, so ivory-like, that a cubic inch of it will weigh more than a cubic inch of some other horse that has indisputably more bone. It is a fact that the bone of some horses is much more dense or compact, and is, as the dealer expresses it, of better "quality" than that of some others.

What causes this greater density in the bones of some individuals than in those of others? We have to look to the elements of which bone is composed for the determining cause. The animal tissues are made up of fluids and solids. The solids are composed of three simple elements, viz.: granules, fibres and cells that are only determinable by means of the microscope. A microscope reveals differences in these elements in different individuals. This is most easily determinable with regard to the element fibres. The fibres that form part of the tissues of an individual of high "quality" are more slender, more compact

and tougher than those of one of less "quality." One can appreciate this even with the naked eye, in examining the walls of horses' hoofs. In a horse possessing a fairly high degree of "quality," the fibres which run from the coronet down, in forming the basis of the wall, are most palpably finer than in those of the wall of a coarser individual. So with the bone; the elements that combine to form it in a horse of high "quality" are finer and more highly organized than in those of a coarser individual.

What you find in regard to quality in the bones of an individual, you find pervading all the tissues of his organism. You do not find a horse with coarse bone and fine skin, or coarse skin and fine bone. If the bone is fine, or has "quality" in an individual, the muscles, tendons, ligaments, skin, hoofs, hair and all the other tissues which enter into his composition are equally fine or are of equal "quality." The "quality" of a horse's bone may be perfect, but undue or disproportionate length, or other defective form, or faulty relationship of one bone to another may make his conformation very imperfect indeed, so that it is difficult to understand why some horsemen think there is any relationship between "quality" and conformation.

A high degree of "quality" is apt to be associated with defects, or one might also state that a horse can have too much quality. Size, or more correctly, substance, is strength, other things being equal. A horse with a high degree of quality, may be so lacking in substance as to impair his power for the performance of work or severe tests of endurance or speed. He may be so light-limbed that he cannot stand the "wear and tear" of hard work and remain practically sound. We often find horses that are superfine with disproportionately small feet, and every experienced horseman knows that it is seldom that such horses do much work and remain sound. A horse, however, cannot have too much "quality," providing it is combined with sufficient substance for the purpose for which he is required. A high degree of "quality" and sufficient sub-

stance are most important attributes in contributing to perfection in horseflesh.

There are many everyday evidences of the ill consequences of deficient quality in horseflesh. You hear a horseman say that a horse has soft legs and he points out an individual inclined to fill about the skin of the fetlocks, to show windgalls which extend up to the sheaths of his back tendons, and whose hocks are inclined to be puffy throughout. If he gets a bruise or injury of any kind to the skin of his legs the consequent swelling is apt to extend and is inclined to remain. Abrasions, cuts, cracks and scratches heal rather tardily. Concussion and direct injury to bone are very much inclined to result in bony enlargement, such as splints that spread out and have not well-defined limits. Standing in the stable too much, readily produces stocking of the legs. There is a predisposition to greasy legs. Feet are inclined to be flat, large and easily bruised.

These tendencies show coarseness of tissue and low organization, a meagre blood supply and inactive nutrition. Horses with "quality" also develop windgalls and splints, if subjected to sufficient cause, but their character differs from those of the coarse horses in being clean-cut and well defined and not having the tendency to spread out. A horse with quality may have a bog-spavin, but it will show as a well-defined prominence and not as a round puffiness of the hock throughout.

Draft horsemen talk "quality" just as much or more than those who have to do with the light breeds. The difference in the "quality" of individuals of the draft breeds is just as well marked as in the light breeds. Take, for instance, a Clydesdale or Shire, either of which will have a considerable quantity of long hair on the back of his legs, which is often referred to as a "feather." If this hair is found to be fine and silky, not coarse and wiry, you will find that it is possessed by an individual that shows "quality" throughout. His skin will not be coarse and beefy, his legs will be fluted, his bone will have a tendency to flatness, showing density of structure. The hair of his mane and tail will be fine like that at the back of his legs. The emi-

nence and depressions formed by the bones of his head will be comparatively finely chiseled. He, in fact, shows "quality" when compared to other members of the same breed that are equally well bred as far as possessing the characteristics of the breed, and as far as the stud book is an indication of breeding. This is a further example of the fallacy of the view that "quality" and breeding are the same thing.

DURING the nine months ended September, 1906, 4,184,181 dozen eggs, valued at $865,437, were exported from the United States, against 2,160,339 dozen exported during the same period in 1905.

DANGERS FROM ACONITINE.—A letter from Dr. F. H. McNair, Mount Morris, N. Y., says: "I fully agree with Dr. Stringer, in the September REVIEW, as to the risk of using aconitine hypodermically. I used one of Knowles' colic tablets (morphine gr. ij, atropine gr. ¼, aconitine gr. $\frac{1}{200}$) on a horse suffering from colic, and in half an hour he was dead from aconitine poisoning, in spite of antidotal measures. Of course, he undoubtedly had a decided idiosyncrasy for the drug."

H. J. MILKS, D. V. M. (N. Y. S. V. C.), is assistant veterinarian and bacteriologist to the department of animal pathology of the Louisiana State University Agricultural Experiment Station, thus relieving the great pressure upon Dr. Dalrymple, who has borne that burden, with many collateral duties, for years. It was only the great capacity for work possessed by Dr. Dalrymple which has enabled him, not only to perform the manifold duties of his position, but also to build up a national reputation as one of the foremost sanitarians of the day.

THE Christmas examinations of the Ontario Veterinary College were held Dec. 20, when the following were graduated: Homer R. Clemmer, Staunton, Va.; Ralph Waldo Clere, Syracuse, N. Y.; David W. Cox, Chicago Junction, Ohio; Francis J. Flanagan, Boston, Mass.; Harry W. Graham, St. Catharines, Ont.; Charles E. Hershey, Erie, Pa.; Daniel James Holton, Winsted, Conn.; Joseph H. Jefferson, Albion, N. Y.; Oscar W. Leach, Hartford, Wis.; Nathaniel McCarthy, Cobourg, Ont.; Bennett Porter, Albert Lea, Minn.; B. F. Ricebarger, Gilead, Ind.; Fred H. Seward, Wallaceburg, Ont.; George S. Smiley, Rawdon, P. Q.; G. Earl Spencer, Craik, Sask.; W. Stanley Thompson, Deloraine, Man.

TUBERCULOSIS IN CHICKENS POSITIVELY IDENTIFIED IN NEW YORK.

By Samuel H. Burnett, New York State Veterinary College, Ithaca, N. Y.

Tuberculosis is described by several American writers as being very frequent in fowls, often occurring as an epizoötic; but when one examines the reports of cases he finds that there are very few in which a positive diagnosis has been made. The disease is one involving so much loss to the affected flocks and is so difficult to combat that a positive diagnosis is especially demanded. A positive diagnosis is fortunately comparatively easy in cases of this disease. The histological structure of the avian tubercle is characteristic, much more typical than that of tubercles in mammals, and the tubercles in all of the cases examined contained so many of the specific bacteria it was an easy matter to find them in specimens properly stained. The only cases in the United States where the diagnosis has been verified by finding the specific bacteria and the characteristic histological structure of the lesions seem to be those reported by Pernot in 1900 in Oregon and by Moore and Ward in 1903 in California. Recently a positive diagnosis has been made of cases occurring in New York State.

In April, 1906, a chicken's liver was received at the pathological laboratory of the N. Y. State Veterinary College for examination. As it was in alcohol the appearance was changed; but rounded whitish nodules from ¼ to ¾ mm. in diameter could be seen scattered thickly beneath the capsule and through the substance of the organ. The liver was of normal size. Microscopical examination of sections showed each of these nodules to be a typical tubercle with necrotic centre bounded by a zone of giant cells, these in turn surrounded by small round cells and connective tissue. Stained for tubercle bacteria, these tubercles showed an abundance of the *Bacterium tuberculosis*.

In June a visit was made to the flock from which the specimen came. There were thirty fowls in this flock; nine had

died during the winter and spring. Three or four were much emaciated, several were lame, with nodular swellings on the feet. In a neighboring flock in which the disease had apparently existed for a longer time the mortality had been higher. There were but eight left; 25 were said to have died during this and last year. Several fowls were killed and post-mortem examinations made. Tubercles were found in each. The liver, intestine and spleen were most commonly affected; in some tubercular swellings were also found in the feet.

The post-mortem appearances were found to differ according to the extent of the disease and the organs affected. The following is a case of generalized disease.

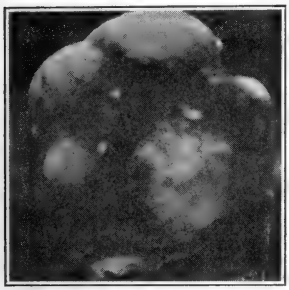


Fig. 1. Spleen chicken No. 5 containing large and small tubercles Natural size.

Fowl No. 5, killed for examination.

A hen in good condition with sub-peritoneal fat about 1 cm. in thickness.

Liver about 10 cm. long, greyish in color, thickly sprinkled with greyish nodules from minute to ½ cm. in diameter, the minute ones translucent.

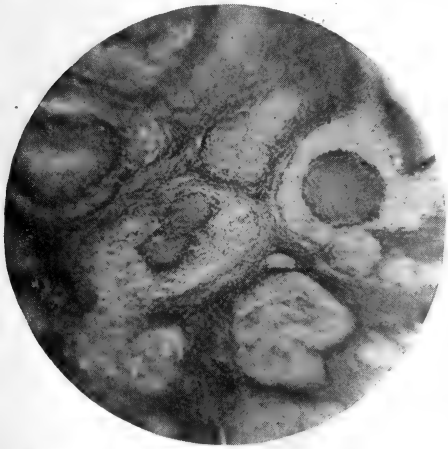


Fig. 2. Section of intestine, chicken, showing several tubercles. x45.

Spleen 2 x 4 x 4 cm.; surface shows 5 large whitish rounded swellings from ½ to 1½ cm. in diameter and is thickly sprinkled with whitish nodules 1 to 2 mm. in diameter.

Intestines have many whitish nodules 3 to 5 mm. in diameter on the serous side and in the mesentery from the duodenum to the rectum.

Nodules were not found in the other organs. Sections of these organs showed typical tubercles. Stained with carbol fuchsin many Bact. tuberculosis were found present in the tubercles.

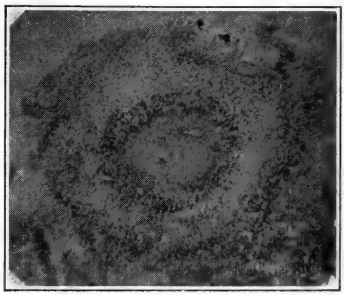


Fig. 3. Section of single tubercle, liver, chicken, showing necrotic center surrounded by zone of giant cells. x 45.

The tubercular nodules on the serous side of the intestine are interesting, as similar shaped nodules in the same location in cattle and sheep are due to Œsophagostoma. In cattle and sheep the nodules have however a different appearance.

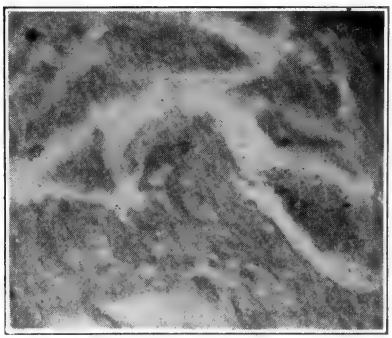


Fig. 4. *Bact. tuberculosis*, liver, chicken. x 500.

It scarcely seems probable that these cases are entirely isolated. The flock first affected is one to which many additions were made by exchange and purchase. Unfortunately it was not possible to trace the source of the infection. It would seem from the occurrence of these cases that tuberculosis is not so rare an affection in fowls as one would be forced to conclude from the hitherto reported cases.

DR. R. H. MCMULLEN, veterinarian to the Manila (P. I.) Board of Health, has an interesting article in the Buffalo (N. Y.) *Commercial* for Dec. 20 on "Cock Fighting in the Philippines." This "sport" is as popular in the Archipelago as base ball is in the States, and he estimates the average attendance at the mains at 5,000, composed chiefly of Filipinos, Chinese, and a certain stratum of Americans. As many as 60 mains are "pulled" off at one point in a day, and $10,000 often change hands. It is prohibited in the city of Manila, and the various places where it has been indulged in have been Americanized into a trust.

RIDGLING CASTRATION.

By W. G. Hassell, D. V. S., Grayville, Illinois.

Read at Annual Meeting of Illinois V. M. A., at Chicago, Dec., 4-5, 1906.

Before operating, I make a thorough examination to see that the health is good. If it is an aged patient, I diet him for several days on bran mashes and a small quantity of oats; no hay. If it is a youngster, running on pasture, I have him taken off of the pasture and placed in a box-stall for two or three days, and diet with bran mashes until he becomes gaunt.

Position for Castration.—I cast and firmly secure the patient. I consider that a great deal of the success of the operation depends upon the manner in which the patient is secured. The toe should not be drawn too high on the side, nor too far forward, but the hock should be well flexed. I then give an anodyne, consisting of one ounce of chloral hydrate.

Operation.—First wash the parts well with green soap; thoroughly disinfect with 1:1000 bichloride solution. Have instruments well sterilized and kept in an antiseptic solution. Take hold of the sheath with the left hand, and with the right make the incision parallel with and about three-quarters of an inch from the median line. If the left hand is employed wash thoroughly before using or wear an operating glove. Open incision gently. Lubricate parts with olive oil and carbolic acid. Follow the external canal, which leads to the internal abdominal ring. If the ring is entirely closed, make an opening superior and posterior to it. In a large majority of cases I find the ring closed, especially in aged horses. I seldom use more than my first finger internally. Locate the cord or the globus minor, which is posteriorly placed, and is more free than the rest. This is easily detected from any other organ by the following symptoms: (1) When touched patient will make a severe struggle of resistance. (2) By being hard and stringy. After locating cord or globus minor, I follow with the finger and bring out a loop or portion of either. By this means the testicle can be brought out of a very small opening, which I consider of great

importance in the recovery. Remove the testicle as high up as possible with the ecraseur. Thoroughly wash out with antiseptics. I always use a goodly amount of olive oil and carbolic acid.

After-treatment.—Continue the bran mashes, give daily exercise; keep the incision sufficiently open to allow of drainage. If patient is a youngster, take him off of grass and place him in a lot or box stall; feed sparingly on soft feed and some grass. The greatest danger is peritonitis. Watch patient closely; take temperature. If I find a rise in temperature, I at once give small doses of aconite and belladonna, or an ounce of nitrate of potassium in drinking water. I watch the bowels; if they become constipated, I give one quart of castor oil. By following this method and treatment my mortality is very small.

Illustrations.—(1) I operated on an aged patient, a double ridgling. I arrived two days later than agreed upon; they had worked the horse that day husking corn; he had free access to all the corn he wanted. I operated on the horse in the evening. About an hour after operation, he began to paw, pulse increased; began to look around at his sides, laid down, rolled, frequent evacuation of bowels; enteritis. I worked diligently with him all night, and saved him. Relieved him with trocar and calabar bean.

(2) Five-year-old ridgling; well fed, no exercise. Had been tried by others, who failed. I finally made my way through abdominal muscles, which had become gristled, and removed testicle. This horse was down twenty minutes. Shortly after he got up he began to paw; then followed regurgitation of contents of stomach through nostrils; showed symptoms of acute indigestion of stomach; in five hours he was dead.

(3) Six-year-old patient, prepared for the operation. I removed from him a testicle that was as large and well developed as if it had been in the scrotum. Compelled to make a large opening. He suffered no bad effects except being a little stiff and a little soreness. In about eight or ten days he was at his usual work.

(4) Black five-year-old ridgling, brought to my barn Sept. 30th; operated Oct. 5th. He had been tried upon both sides. I first made an incision on left side and well up in external canal; located end of spermatic cord; rolled him over and made an opening on the right side and found that the tissues had become quite indurated. I made my way through them, and succeeded in finding a large testicle in the abdominal cavity. First day, patient appeared as though nothing had happened to him; second day slightly swollen and refused to eat; temperature rose two degrees. Gave him three doses, six hours apart, of aconite and belladonna. He recovered very fast; third day, temperature normal, ate well, and in nine days ready to go home.

I give these illustrations to show what benefits I derive in preparing my patients for the operation.

NEW CURATE: "I say, madam, that wretched little dog of yours has bitten a piece clean out of my leg." The Lady (anxiously): "Dear, dear! How annoying, when Tony's been ill, and the dear veterinary surgeon said he wasn't to touch meat for at least two weeks."—*(The Sketch.)*

EVIDENTLY the office of State Veterinarian is not always a pleasant one. Dr. C. A. McKim, who holds that position in Nebraska, had to face a shotgun recently when he ordered a number of glandered horses destroyed. But the horses were killed, and the veterinarian still lives.

THE IOWA-NEBRASKA VETERINARY ASSOCIATION, through a resolution, proposes to merge with the Missouri Valley Veterinary Association, providing the latter will receive its members in good standing without membership fee, and providing also that it will agree to assume control and responsibility for the *Bulletin* published by the Iowa-Nebraska Association.

A NEW BULLETIN on "Nodule Disease of the Intestines of Sheep," by Dr. W. H. Dalrymple, of the Louisiana Experiment Station, is just off the press. His former work along this line has been greatly appreciated by the flockmen of the country. Joseph E. Wing, in his "Sheep Farming in America," says they are the most useful series of experiments ever made in attempting to rid sheep of parasites. Dalrymple's bulletins have been reproduced in and commended by all the papers devoted to the industry in the country.

AGALACTIA IN THE MARE AT PARTURITION.

By H. C. Singer, M. D. C, Cowden, Ill.

Presented to the Meeting of the Illinois State V. M. A., at Chicago, Dec. 4, 1906.

This condition is an absence of milk in the mammæ at the time of giving birth to the young, especially found in mares which have not been bred for a long time or have foaled their first young, though themselves aged. This absence of secretion may occur even when pregnancy has been normal and has reached its full limit.

Etiology.—Gastric or intestinal affections, fatiguing work before time of parturition, mastitis, incomplete development or fatty degeneration of the mammæ, or atrophy of same, exhaustion following disease, severe labor at the time of parturition, insufficient food either before or immediately after parturition, natural debility, emaciation, etc.

Symptoms.—The udder is small and soft; attempts at milking only result in the production of some drops of yellowish serum, followed sometimes by a few drops of white, watery fluid. In some instances the milk gradually appears sometime after parturition, and a moderate quantity is secreted, but in the majority of cases the milk is not produced at all, or in very small quantities.

This condition is very unfortunate for the progeny, which will suffer from hunger if not observed, and must either be artificially cared for, or be put to another animal to be suckled.

Treatment.—The treatment of this condition I find usually proves unsuccessful. It must chiefly consist in giving good food, particularly of a leguminous kind, and other agents which are likely to stimulate the secretory function of the mammæ. Locally applied alcohol or castor oil with friction. The teats should be frequently stripped and the mammæ well rubbed. Internally, jaborandi, oleum recini, alcohol and general tonics.

Those physicians in London who are willing to be called at night have red lanterns attached to their houses.

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."

PARTIAL DISLOCATION OF THE CERVICAL VERTEBRÆ.*

By W. J. MARTIN, V. S., Kankakee, Ill.

On the morning of April 8, 1905, I received a telephone message from an adjoining town, requesting me to visit a mare that had injured herself during the night previous. Upon arriving at the farm I found a beautiful mare of the Percheron breed, aged four years, and gleaned from the owner the following history of the case: The mare was due to foal, as the owner supposed, about the middle of April, and with this understanding the mare had been placed the night previous in an ordinary stall, and when the owner appeared upon the scene the next morning, he found the mare securely cast in the stall with her newly born foal behind her. Upon releasing her from her predicament, the animal was so entirely exhausted as to be unable to arise. After being allowed to rest for an hour or so, she was after much exertion raised to her feet, when it was discovered that there was something radically wrong with her neck. The head hanging down so that the nose nearly rested on the ground and sharply inclined to the right, the poor beast presented a pitiable sight. Her head was battered up, with both eyes swelled almost shut, subluxation of the cervical vertebræ between the 5th and the 6th bones, together with fracture of external angle of each ileum.

When the head was raised up to its normal height, and firm extension and pressure was exerted on the neck, the subluxation could be reduced, the bones slipping into place with a decided crepitating sound; but when the pressure was removed, and the animal made the slightest movement, displacement would again occur and the animal's head would drop down and incline to the right side of the body. There was no marked loss of coördination in the posterior part of the body due to the pressure upon the spinal cord at the seat of luxation. The

* Read at the Semi-Annual Meeting of the Illinois State Veterinary Medical Association, July 12, 1906.

animal's appetite was in nowise impaired. She ate hay and grain and drank water as usual.

In all my years of practice, I have never met with a similar case, and to say that I was at a loss how to proceed, as to the best methods of treatment if any should be adopted, is but putting it mildly. I did not think that there was any use of doing anything further than to advise the animal's destruction, but to this procedure I felt a decided repugnance.

After watching the animal's actions for an hour or two, and conversing with the owner and learning from him that he was very anxious to try and save the mare regardless of expense, I decided to place the animal in the slings and apply splints and bandages to the neck, in the faint hope of retaining the cervical bones in position long enough to secure permanent fixation.

The best material for splints at hand was found to be light barrel staves. These were soaked in hot water and properly shaped to the neck, and extended along its entire length. The mare was then placed in the sling, and a light, strong halter was placed on the head, two strong straps were attached to each side of the halter rings and passed through two rings fastened in front of the mare, so as to elevate the head as near the natural position as possible, and there tied. The dislocated vertebræ were then brought into position by careful extension of the head and neck, together with lateral pressure over the seat of the injury. Thick layers of cotton-wool were laid along the right side of the neck, with thinner layers on the left side and the splints applied. A roller bandage six inches in width, made from light woolen bed blankets, held all in place.

After the mare's neck had been dressed she appeared to be quite comfortable. She ate hay from a small rack that had been placed on a level with her head.

The successful issue of the operation depended entirely on the question whether the animal's vitality would be sufficient to sustain her in the standing position in the sling with her head tied up long enough to permit nature to retain the cervical bones in their natural position. Although there was but little tumefaction around the seat of injury, and no extravasation of blood into the surrounding tissues, I must confess that I was very skeptical on this point. However, having done everything possible for my patient, I informed the owner to keep her up on her feet in the sling as long as he possibly could, but that if she became tired out, and commenced to lie down in the sling and thus throw an extra amount of weight on the head in its ele-

vated position, to let her down on the floor with the sling under her.

She remained standing for about 24 hours, when she became very restless and threw her whole weight on the sling, and they were forced to lower her to the ground. During this restless spell, the neck dressing became slightly displaced, though not enough to permit displacement of the bones. After resting on the floor for a few hours, she was again raised by the sling to a standing position and the head tied up as before. This method was continued for three days, when the animal becoming exceedingly restless, the bandages and splints were entirely displaced. After this unfortunate event, I naturally expected to find that all our efforts would be rendered futile and that the dislocation would be just as complete as in the beginning.

You can well imagine my surprise when the owner said, "Doctor, her neck is straight and all right." And such indeed was the case. The dislocation had been entirely reduced. But as a precautionary measure a light splint and bandage was again applied to the neck and kept on for a few days longer, with the head tied up when the mare was standing up in the sling. She was kept in the sling for about three weeks altogether.

As a complication parturient laminitis set in and the mare walked with great difficulty when taken out of the sling. At the end of a couple of months, when the animal's strength had returned, the wounds of the ileum, which had been suppurating more or less all the time, were opened, and the broken fragments of the bone removed from both angles.

At this writing my patient has entirely recovered her old-time rotund form that she had before she met with such a distressing accident. She weighs about 1500 pounds, works every day on the farm, and has again taken her place in the ranks of the farm matrons. Not a sign of the dislocation is to be seen.

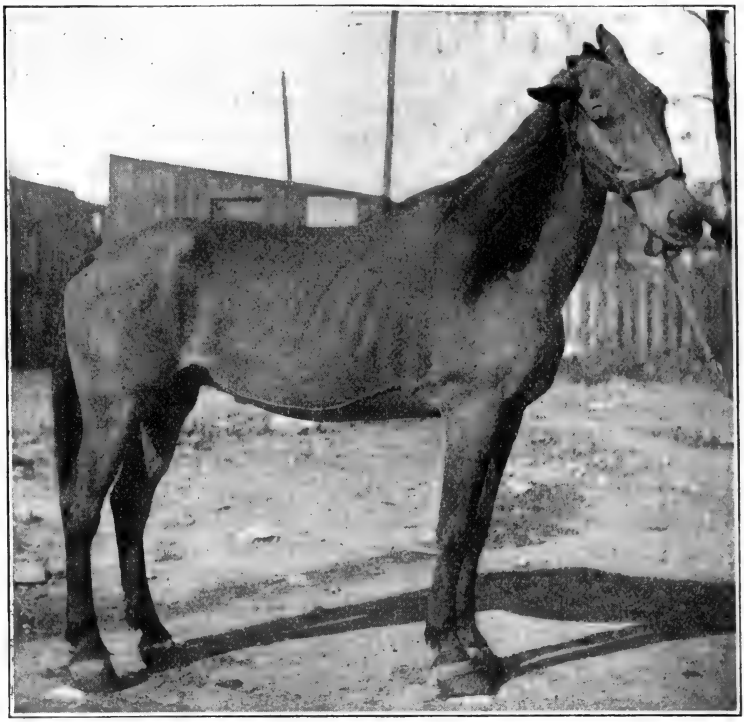
MASTOIDITIS IN A HORSE.

By A. T. KINSLEY, M. Sc., D. V. S., Kansas City, Mo.

The subject, a dun gelding, about 12 years old, the property of a horse trader, was presented at the Kansas City Veterinary College clinic for treatment, October 27, 1906.

The following incomplete history was obtained: The horse was in good health until about the first of September, when an injury received in the stall resulted in an abscess at the base

of the right ear. The abscess was treated for some time by a local veterinarian.



Symptoms.—The head was turned to the right; the right ear drooped (see cut); a slight ill-smelling discharge came from the right external auditory meatus; the right eye was protruded; the lips and expression muscles on the right side were paralyzed; there was also a partial lingual paralysis; the gait was unsteady; appetite was good, but prehension was interfered with materially because of the paralysis; temperature, respiration and circulation were normal.

Diagnosis.—After two or three days' observation, it was concluded that the horse was afflicted with mastoiditis, with possible extension and involvement of the internal ear. The diagnosis was based upon the following anatomical relations: The lips and muscles of expression are enervated by the facial nerve. Inflammatory processes of the mastoid cells tend to

cause a bulging of the cells which are adjacent to the aqueduct of Fallopius and this may produce sufficient pressure upon the facial nerve to result in its paralysis. A long continued inflammation of the middle ear and mastoid cells may result in a disarticulation of the petrosal bone. The disarticulated bone may cause pressure upon the adjacent contents of the cranial cavity and hence upon the origin of the trifacial and glosso-pharyngeal nerves, and this may result in partial paralysis of the regions enervated by these nerves—that is, the inferior lip, tongue, etc. Pressure may also be exerted upon the origin of the motores oculorum, patheticus and abducens nerves and produce motor paralysis of the intrinsic ocular muscles and thus allow the eye to protrude. The unsteady gait may be produced either by pressure upon the cerebellum or, possible, a disturbance in the semicircular canals.

Because of the age of the animal and the length of time the disease had been present, the outcome was considered unfavorable and the horse was destroyed.

A careful examination of the parts was made and a necrotic condition was found in the middle ear extending into the mastoid cells and out through the auditory meatus. The entire contents, the ossicles, ligaments, muscles and mucous membranes of the middle ear had been destroyed, the petrous bone was involved in its entirety, the mastoid cells being enlarged and the bone was disarticulated; the contents of the internal ear were also slightly involved.

This was an interesting case. I have not found any veterinary literature upon this disease.

A STALLION WITHOUT A SHEATH.

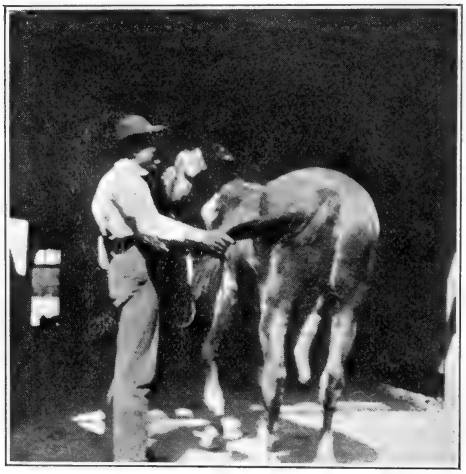
By S. E. Hershey, V. S., Charleston, W. Va.

History:—The owner came to my infirmary in January, 1906, stating he had a horse, five years old, that had jumped over a stump when a colt with its mother, and tore its sheath from the abdomen, and the penis swung pendulous between its hind legs. The owner wanted to know if any operation could be performed so as to suspend the penis in a natural position. I told him I thought not, and the only thing to do would be to amputate the penis to make him a useful horse, but told him to bring the horse to the infirmary (he lived 18 miles away), and then I could advise better after seeing him. He said he would, but did not until April 21. When he rode the horse through town it attracted more attention than Barnum & Bailey's cir-

cus. He was five years old, 15 hands high, weighing 850 pounds, and apparently well bred.

The present owner had only owned him six months, and the horse had been traded and owned by about 50 different people in six or seven adjoining counties.

After making an examination, I found no scars whatever to show that he had met with an accident, and also found he had never been castrated. The testicles were both up in the inguinal canal, the left the larger, lying just outside the external abdominal ring, about as large as a walnut, and very soft. The right one was about as large as a hulled walnut, no glandular tissue, lying in the inguinal canal.



BEFORE OPERATION.

AFTER OPERATION.

I then advised the owner that the better course to pursue was to castrate, and then after recovery (30 to 60 days) amputate the penis, to which he finally consented. I castrated and sent the horse home in five days. He made a nice recovery and was brought back to the infirmary Aug. 14. I amputated 10 inches of the penis, under anæsthesia, Aug. 16, from which he recovered, and in two weeks was sent home, and has been used for riding and driving ever since. He at no time after the operation had over 102.4° of fever.

Would this be termed, before operation, an hermaphrodite? The mammary glands were partly developed, and what would it be termed now?

PECULIAR FATAL CASES AND POST-MORTEMS.*

By LOUIS JULIAND, D. V. M., Greene, N. Y.

There seems to be a rather strong aversion on the part of most veterinarians to acknowledging that they do lose cases occasionally that they have treated.

During one of the last lectures delivered by Prof. V. A. Moore while I was in college, he said "Never miss the chance to make a post-mortem." Then he went on and said that there would never be two which would be just alike and you will always learn something.

Many interesting cases are reported which are fatal, but without records of any post-mortems, which in many cases would explain everything, prove the diagnosis and satisfy the owner, the last being the most important, as the future reputation of the practitioner may be based almost entirely on the results of his post-mortems.

The most common fatal cases are cases of colic in its various forms.

Case I.—The first case was that of a roan gelding kept for light driving, well taken care of and seldom driven more than a couple of hours in a day.

One morning when the owner awoke he heard this horse making considerable noise, and on going to the barn found him very uneasy, rolling and tumbling around. He called the first man he could get and he gave the horse "Daniel's Colic Medicine" until he became quiet; then he left town. It was only shortly after this that I first saw the case. I gave an aloes physic ball and then cannabis indica to keep him quiet, but without success. He died about 2 A. M. that night. Post-mortem :—The horse was opened along the posterior border of the last rib to the median line, then direct to the pelvis, and this turned back, exposing the bowels, when two loops were seen to be dark colored. Tracing these up I came to a knot where they were corded. The knot was formed by two small tumors hanging about four and eight inches respectively from attachment by fine cord. They were tied together around the bowel so tightly that one had to be broken loose to untie the knot.

In every case, where I have given cannabis indica to quiet a horse, it has acted as an excitant if it was fatal, otherwise I would get the result desired. Why is it?

* Read by title at Meeting New York State V. M. Society at Buffalo, N. Y., Sept. 11-13, 1906.

Case II.—A team drawing logs on bobs was stopped to rest. When started the footing gave way under one horse and he fell down. He got up and drew his end to the mill with the other horse. Here he showed signs of colic, was put out, and about four hours later I treated him by giving pill and medicine to quiet him. He physiced out next day and was led home, about six miles, where I saw him at night. He died the next day. Post-mortem :—He ruptured the diaphragm and some of the small bowels passed into the chest cavity.

Case III.—Horse sick all night and nothing done for it. When I saw him he was past help, apparently with acute inflammation of the bowels. Died about midnight. Post-mortem : — No indications of congestion or inflammation. The cæcum was only about two feet long and contents quite dry. Nothing else wrong about the horse that I could find.

Case IV.—Called about midnight for a case of colic. After half an hour I told the man his horse was going to die. He would not have him killed, so I left medicine for him and went home. In the morning about ten, he came to my office and wanted more medicine, which I gave him. He went home and found the horse all in, so gave no medicine. I went down that afternoon to make a post-mortem, as I had told him I would. Post-mortem :—Everything apparently all right, except there were small calcareous deposits all through the intestines and on the lungs and heart. Apparently nothing to cause death.

Case V.—Called to see a horse that had not been doing well. Apparently a case of distemper. Owner said he had a little cold. Next day a little better at noon. At 3 P. M. horse was down and physicing badly. Died before 5 P. M. Post-mortem :—Found four tumors, nearly round, estimated to weigh about 100 pounds. There were also quite a number of smaller ones. This horse had been off occasionally for over two years.

These are only a few of many interesting cases, some of which are equally or perhaps more interesting than these that are described here.

In no case could the condition be told and cause of death known without the post-mortem examination.

Personally I feel much better satisfied to think that I have made these post-mortems and I know that the various owners certainly are better satisfied as a result of them.

CYSTIC ADENO-CARCINOMA.

By C. J. MARSHALL, V. M. D., Philadelphia, Pa.

The subject was a bay mare, 16 years old, used in a private coach stable for the past eight years. Was never bred and had been an unusually serviceable animal.

Last May she was turned out for the summer. Soon after this it was observed that she was getting large around the abdomen. This condition, at first, was attributed to the grass diet. It was then thought that she might be in foal. She increased in size till the time she was brought to the stable for winter. The udder increased in size and the abdomen was as large as in a normal pregnancy a month before parturition. Considerable œdema developed under the abdomen.

October 15th she showed colicky pains. Appetite was bad, temperature 102.5, pulse 72, peristalsis normal, and defecation and micturition were normal.

Diagnosis was not made, and no treatment prescribed, except cannabis indica in case the pain increased.

The next day the above symptoms were magnified. Pulse was 90. An attempt was made to palpate the rectum, but it was impossible to get the hand in the rectum farther than the wrist. A tumor was suspected and the owner advised to have the mare destroyed to prevent more suffering. This was done Oct. 18th.

On post-mortem the spleen was found about twice the normal size, a large quantity of serum in the abdominal cavity, and a tumor of the left ovary that weighed 37 lbs. It was spherical and very firm.

The tumor was sent to the pathologist of the University of Pennsylvania, who diagnosed it as a cystic adeno-carcinoma.

ENORMOUS CHAMPIGNON IN A HOG.

By S. E. HERSHEY, V. S., Charleston, W. Va.

On August 15 I received a telephone call from Mr. B., about two miles from town, to see a hog, 15 months old, weighing 140 lbs., that had a big knot or tumor growing where testicles should be, and determine if anything could be done to help it. The owner stated he had opened it once or twice in the past two months, and a little pus escaped, but it had gotten very hard at this time. I called to see this hog and found a champignon on the left cord as large as a man's head, and nearly touching the ground. My prognosis was unfavorable; but, as the hog was

not worth a dollar in this condition, the owner asked me to operate. I amputated the champignon with but little hæmorrhage, and it was quite a successful operation. But my patient died 10 minutes later from shock. The champignon weighed 8½ lbs. This hog was castrated when three months old, and the champignon grew from that time on.

NATURE HEALS A FRACTURED ULNA.

By F. H. McNair, D. V. M., Mount Morris, N. Y.

Patient a draught horse, 26 years old, but in excellent condition. Was kicked so as to fracture the upper third of ulna, allowing free movement of olecranon. Owner was advised to destroy horse, but for sentimental reasons did not wish to do so without a trial at saving his life. As animal was in a pasture lot he could not be put in slings, so nature was allowed free play. Now after three months horse hobbles around fairly well, though the leg is thickened at point of fracture and is somewhat shortened.

A FOAL WITH SAND IN STOMACH.

By F. H. McNair, D. V. M., Mount Morris, N. Y.

A sucking colt, 10 weeks old, just recovering from strangles. When seen it had been refusing for several days to suck much. Temperature 105°, great lassitude and weakness shown. Diagnosed as internal abscesses from strangles, and gave doubtful prognosis. Prescribed course of tonics. Colt died the next day. Post-mortem examination revealed a double handful of clear sand in lower fundus of stomach. Had heard of colts eating other foreign substances, but had never before heard of a sand diet.

"Speck" is the appropriate name of the "smallest horse in the world," owned by Edward Wigand, of Delaware, Ohio. The diminutive animal is 6.2 hands high and weighs sixty-two pounds. He is six years old.

"By abusing the privileges of the highways in Europe automobilists are sowing the wind there the same as in the United States. In Belgium the other day a petition was presented to the Parliament asking that every motor car in the country be condemned and burned in one great bonfire, the resultant scrap iron to be sold for the benefit of those who have been maimed by the modern juggernauts."—(*New York Herald, Dec. 30.*)

SURGICAL ITEMS.

By Drs. Louis A. and Edward Merillat, Chicago, Ill.

CHRONIC GONITIS OF THE HORSE.

Chronic, painful inflammations of the stifles of horses are quite frequently encountered among the hard-worked classes. The disease is easily recognized as a special entity, and is easily differentiated from traumatic arthritis by the systemic symptoms that always accompany it, and by the characteristic physiognomy of the stifles it always produces. It is seen only in mature horses, between the ages of six and fifteen years. Its earliest manifestations are a state of unthriftiness, tucking of the flanks, variable appetite, fatigue, and an inclination to lie down soon after entering the stable, often before having finished the feed. The first local symptom is pathognomonic, if the above general signs are also in evidence. It is the tendency to hold the foot from the floor for a few moments, at frequent intervals, while at rest in the stall. As the disease becomes bilateral, first one then the other foot is thus lifted. The foot is lifted about six inches from the floor in a forward direction and the stifle is pressed into the abdomen (Fig. 1). Palpation of the stifle reveals a limited sensitiveness and a marked bulging of

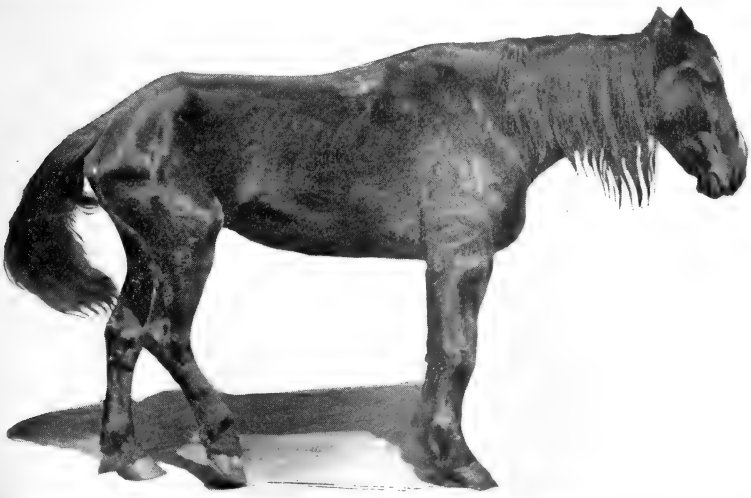


Fig. 1.—A case of osteoporosis. The horse is in the act of lifting the foot from the floor. The stifle is bulged. The right ramus of the inferior maxilla is enlarged.

the capsular ligament internally. Later the femero-tibial angle becomes more and more obtuse, until these two bones form almost a straight line from the hip to the hock. The crural muscles atrophy, and the fascia lata becomes stretched so as to stand out prominently like a large tendon. The general symptoms accentuate gradually, the patient emaciates, the appetite fails, the flanks tuck more and more, rising from the night's recumbency becomes difficult and even impossible without assistance, and finally some complication ends the sufferer's existence.

This clinical picture is well known to city practitioners, who call the disease gonitis and pronounce it incurable. A rheumatic origin is often suspected. Doubtless it is as good a "rheumatism" as we could possibly find in domestic animals. Its mysterious location at the beginning, its migration from one leg to the other during the first phases, its chronic course, its general symptoms, and finally the articular deformity it produces, are a chain of conditions that justify the use of the mysterious word "rheumatism." Without such a convenient word embarrassing explanations would be required.

FIG. 2.—A case of osteoporosis. The stifle is markedly tumefied. The femoro-tibial angle is straightened. The tensor fascia lata is stretched

A more serious study of the disease, however, stamps it as one of the manifestations of equine osteoporosis. In innumerable cases it coexists with the maxillary manifestation of that disease (big-head), Fig. 1, which fact, together with the post-mortem appearances of the whole skeleton, lucidly classifies it with this general skeletal disease, whose origin still remains in doubt. Gonitis is therefore but one of the many local manifestations of a general rarefying osteitis—a decalcification or demineraliza-

tion of the bones. It is analogous to osseous cachexia of the dairy cow. It is a disease of domestication, a stable disease, a work-horse disease, that is unknown in animals leading a healthful out-of-door life. The herbivora seem to be able to assimilate enough calcium, from the trivial amount of this element found in vegetables, to construct their bones, but they do not seem to be always able to assimilate enough to effectually reconstruct them when broken, nor to prevent them from demineralizing under certain conditions. The great amounts of bran, poor mill-feed, middlings, etc., which contain no calcium and the general dearth of this bone constructing element in all of the feeds of the horse, is very evidently the real cause of this mysterious disease. Proof of such an assertion must, however, remain wanting, on account of the impossibility of experimentally producing the disease in the absence of the subtle susceptibility or subtle derangement of nutrition, necessary to the successful ac-

FIG. 3.—One femur of a case of gonitis bilateralis showing fracture of the trochanter minor externus and the rarefied condition of the bone tissue at its base. The fracture was produced in the fall when killed. The bone is rough, porous and was easily stripped of its periosteum.

tion of the exciting cause. Nevertheless, the frequency with which *gonitis* appears as a visible manifestation of marked cases of *osteoporosis* makes the theory of their common origin quite feasible, and Fig. 3 confirms the theory in one case at least.

* * *

AN OBSERVATION ON THE INFLUENCE OF ALTITUDE ON HÆMORRHAGE.

While performing a number of rather crude sanguinary operations on horses in an altitude from 5,500 to 7,000 feet, it was noticed that the surgical wounds bled more profusely, that the loss of blood produced more shock, and that its flow was much more difficult to control than in lower altitudes. The ordinary blood loss that always accompanies radical operations on the withers and poll for chronic fistulæ, produced in every case an alarming state of shock, manifested by gasping, tremors, per-

spiration, disturbed circulation and accelerated respirations. The exertion against the restraining harnesses alone provoked a transient exhaustion, precisely the same as exertion does to human beings unaccustomed to these altitudes, but in the non-sanguinary operations, such as neurotomies, there was no shock. The exertion of restraint plus the loss of blood was manifestly disastrous. In every case reaction was slow, although there were no fatalities from this cause. The horses referred to worked in these high altitudes during four summer months. During the remaining eight months they pastured on ranges much lower.

* * *

A DOSE OF ANTITETANIC SERUM FAILS TO PREVENT TETANUS.

That a single dose of antitetanic serum may sometimes fail to prevent tetanus is shown by the following report:—A sixteen-hundred pound draft horse partly pulled a hind shoe and then stepped back on one of the outside nails, which penetrated deeply and caused considerable pain. The foot was well pared by a horse shoer and given the usual stable care by the attendants. On the fourth day, the pain having accentuated, the horse was taken to the hospital, where it was immediately given radical surgical treatment and a 10 c.c. dose of Pasteur's antitetanic serum. The pain gradually diminished during the succeeding five days. In fact, on the ninth day little lameness remained, but symptoms of tetanus followed in its wake and continued to accentuate until a pronounced case of subacute tetanus developed. The period of incubation was nine days, the first symptoms appearing five days after the administration of the preventive inoculation. The symptoms were probably attenuated somewhat, as recovery occurred after only three weeks.

This case is only an illustration of the well-established fact that a single dose of antitetanic serum is not always sufficient to assure an absolutely perfect immunity, but it may serve as a reminder not to place too much dependence upon a single dose when much depends upon the results.

* * *

CONGENITAL ATRESIA OF STENO'S DUCT.

A nine-hundred pound saddle horse, three years old, shortly after having fallen into a new owner's hands was presented for the treatment of a "tumor" on the lower jaw. It was known

to have existed for a year without materially changing in size or form. An earlier history was not obtainable.

On examination the enlargement proved to be a cyst, fluctuant, non-painful, perfectly spherical and the size of a base ball. There were scars on its surface indicating previous incisions, and it was learned that a veterinarian had once explored it with an aspirating canula and evacuated its contents, which was recognized as saliva. The cyst refilled in about two weeks.

On firm pressure about one-third of the contents could be forced into the duct proximally, but none could be forced into the duct distally, which circumstance led to the impression that the duct was occluded by some mysterious obstruction between the cyst and the buccal cavity. But the obstruction could not be located nor could any part of the duct be felt between the cyst and the mouth. The tumefaction of the parotid gland that always accompanies acquired obstructions of Steno's duct was wanting and there was no evidence that the gland was ever implicated. The parotid region was apparently normal, but after a correct diagnosis was made a closer examination proved it to be atrophied. The gland was not developed.

A lack of previous experience with a similar condition made this case a veritable enigma. The salivary contents, the connection of the cyst with the duct proximally, the total occlusion distally and the absence of any evidence of present or past abnormalities of the gland, proved a combination of conditions that were difficult to connect with any acquired defect of Steno's duct. A congenital defect was not suspected.

Operation.—The patient was cast with the harness, the region clipped, washed and disinfected, and the cyst carefully dissected out without evacuating its contents. Its close relations to the glosso-facial artery and vein, as well as the fruitless search for the distal end of the duct (which was found wanting) required exceptionally careful dissection. When the dissection had been carried entirely around the cyst, it was found to be a spherical blind termination of the duct. There was no distal outlet nor any evidence that any such outlet ever existed. It was now clearly recognized as a congenital atresia. The gland was palpated and found practically absent. The puzzle was solved. The proximal end of the duct, which was as large as a man's finger, was dissected free from the glosso-facial artery and vein as far as the angle of the jaw and then ligated with a braided-silk thread. The surgical wound was sutured with a continuous stitch. (The result is a matter for future observation.)

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By J. P. O'Leary, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

The Present Standpoint on the Question of Purpura Hæmorrhagica.—The reports of Dr. Barthel present a complete compilation of references covering the following points: (1) concerning the cause and origin of purpura hæmorrhagica; (2) its relation to the infectious diseases; (3) the modern methods of treatment and results. Morbus maculosus, or purpura hæmorrhagica, for which quite a series of other names were used and some of which are at present in use, represents an infectious or an intoxication disease. It is characterized by the appearance of numerous extensive sanguineo-serous effusions, especially on the head, chest, abdomen and limbs, also by hæmorrhages in the skin and subcutaneous connective tissues, in the mucous membranes, particularly the respiratory organs, in the nasal cavity, and in other visceral organs, which result in gangrene of these parts. According to Friedberger and Fröhner, and still more recently Javorisky, the disease may represent a primary malady. However, according to the customary acceptation of the etiology of morbus maculosus, it develops as a secondary affection to different kinds of acute and chronic diseases, particularly preceded by infectious diseases. At the present moment, there are two theories concerning it—one is, that it is infectious, the other, that it is simply an intoxication disease. Friedberger and Fröhner are the principal supporters of the former theory, for which they assume schizomycetic infection as a factor, basing their opinion upon the frequent enzoötic outbreaks and the presence of several attacks in one and the same case; further, also, the similarity of the disease with malignant œdema and the presence of the *Bacillus hæmorrhagicus* in morbus maculosus, Werlhofü, or the purpura hæmorrhagica of man. The author considers the latter disease only in so far as it relates to the purpuric diseases of the horse. Contrary to this alleged acceptation, that purpura is an infectious disease, Dieckerhoff maintains, upon the ground of his clinical observations, that it is an intoxication disease and certainly an autointoxication of the body through primary foci with a specific virus. That toxines have formed at these particular points

through the influence of microörganisms and cause alterations in the walls of the bloodvessels, which account for the hæmorrhagic lesions. The presupposition of a chemical poison circulating in the blood, the frequent non-febrile course of the disease, the very sudden and simultaneous appearance of swellings in various parts of the body, supported by the fact that the disease, as numerous experiments have substantiated, is neither infectious nor can it be transmitted to other horses or animals, and that up to the present time the schizomycetes have not been determined with certainty. We know very little of the nature and derivation of this infectious matter, whether the source of infection takes place through the inhalation of the foul air in stables or by means of food or other intermediaries. A disease identical with purpura hæmorrhagica of the horse, according to numerous reports, seems to have appeared also in cattle and buffalo, likewise in goats. Whether the hæmorrhagic diseases observed by Lellman in dogs are to be considered as morbus maculosus cannot be affirmed definitely. In swine, quite frequently, we find multiple hæmorrhages in the muscles which cannot be associated with purpura. According to Ostertag, these are due to rupture of the muscle fibrillæ during transportation. Regarding the relation of morbus maculosus to the infectious diseases, the author presents the following: that purpura hæmorrhagica is neither identical with abdominal and spotted, typhoid, nor with scarlet fever or the disease of the same name in man. Theiler admits on the ground of his experience in South Africa, that purpura hæmorrhagica has some casual association with influenza. Similar circumstances are reported by Lignières, that according to his bacteriological examinations, he frequently found the *Bacillus equisepticus*, and his experience in the Argentine Republic, where influenza prevails mostly in an acute form, without an inflammation of the thoracic organs, later he observed very frequently morbus maculosus as a secondary disorder, which shows that a very close connection exists between the two diseases. Bernabei and Boatini presume that on account of having seen Italian horses affected simultaneously with purpura hæmorrhagica and anthrax there must be some association. Maier, Becker and Thomas are firmly convinced upon the ground of many years of experience in remount depots, that strangles and morbus maculosus stand in casual relation. The latter, staff veterinarian at the remount depot at Skarsa, has established the fact by statistical records, that except during the period of the prevalence of

strangles, purpura hæmorrhagica never appears, and that the number of cases were more numerous, the more irregular, severe and frequent strangles appeared. Still proof for all these assertions must be brought into a more scientific form. In the third part, modern methods of treatment were discussed. The speaker referred in statistical form to the numerous recent publications concerning the treatment with Lugol's solution, iodovasogen, actol, protargol, bollargol, ichthargan, also the serum therapy. Finally, he made a detailed report concerning the successful treatment of the cases of morbus maculosus at present in the clinic at the Veterinary High School, Dresden. It was interesting to note the accurate records of the temperatures following the collargol injections. As a result of the completion of his work, the author sums up the following conclusions: (1) The most appropriate designation for the malady just described is, doubtless, the Latin term "morbus maculosus," or the German name, "blutflecken-krankheit." All other names should be sedulously avoided, as they do not throw any light on the character of the disease and therefore cause confusion. Nothing is known concerning the cause and origin of purpura hæmorrhagica. However, it is accepted in all probability that it is not a primary affection, but rather a secondary disease and not infectious, but, on the contrary, an autointoxication. (2) Its relation to the infectious diseases necessitates further elucidation and scientific verification. (3) It is difficult to find a safe guide for the application of the remedies recommended for use from the labyrinth of medications and agents employed in the treatment of this disease; for the experiences brought forward, particularly in later years, regarding the use of the iodine and silver therapy, likewise the serum treatment, have not fully justified expectations. Yet the reports concerning their value purport mostly to contradiction, that unfortunately no hitherto known remedy can be ascribed without prejudice, which acts as a specific in the treatment of morbus maculosus, but rather tend to show that all those treatments have scarcely influenced the mortality figures, which average 50 per cent., and that the various cases met with in practice, which in spite of the severity of the attack, the patients recover without any therapeutic interference. It is presumed that in the recovery of animals affected with morbus maculosus, that it is not this or that remedy that plays a part, but the *vis medicatrix naturæ*. In any case, the treatment of morbus maculosus up to the present moment, represents a complete dark field, and necessitates further research.

In the discussion of this subject Mr. Pelz mentioned a few cases of morbus maculosus successfully treated with Tallianine, 10 per cent. iodovasogen and ichthyol. Prof. Joest hopes for a solution of the whole question, when the etiology of the disease is cleared up. The question arises, as to whether we are dealing with an intoxication or an infectious disease at this time, and this can be determined only experimentally, as all the body juices and secretions of horses must be examined. If we have to deal with an intoxication, then the serum treatment is of no avail. J. Richter was not able to prove by facts the efficacy of the use of Tallianine; the other remedies are also very expensive. Collargol, however, in his opinion, has a favorable influence on the disease, as was explained in one case. The patient must be placed under the continuous influence of the silver treatment. Thrombi are of frequent occurrence after the use of ichthargan. Collargol is at present the best remedy, although fever is a sequel to injections of the new collargol preparations. However, this is disputed by Credé in the case of human practice. Zschockes maintains that the frequent appearance of the disease in remount depots suggests an infection element as a factor, but this is an illusion. It frequently follows infectious diseases, as strangles, and upon this account we are led to believe that petechial fever is a secondary disease. Mr. Pelz believes that collargol has an unexplained specific action upon the œdema present in morbus maculosus, as he saw very large swellings disappear after such injections. J. Richter disagrees with this statement regarding the absorptive action of collargol; he says its principal action is due to its disinfecting power. By means of injections, a general disinfection of the body takes place, together with an attenuation of the bacteria present in the primary foci, thus limiting the production of toxines, whereby the absorbing power of the body remains uninterrupted.—(*Berliner Tier. Wochen.*, *No. 16.*)

BELGIAN REVIEW.

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

Considerations upon Umbilical Hernia in Colts [*Prof. Hendrickx*].—From an inquiry made among practitioners, the author derives the following conclusions: There is no doubt that heredity plays a great part in the frequency of the disease. The determining causes are less clear—tractions on

the cord, struggling movements of the colt, violent efforts for the expulsion of the meconium, etc. The means of treatment can be classified into five categories: (1) Hygienic means—The umbilical hernia disappears under the influence of the natural development of the animal; a dry and substantial food will promote this end. (2) Bandages—These are not very practical, being either difficult to keep in position, or, again, giving rise to deviation of the vertebral column. (3) Various topics—Subcutaneous injections of chloride of sodium or of zinc or of phenic acid. Good results are obtained in small hernias. Dayot advises the use of nitric acid. In Belgium an ointment made of chromate of potash is used. The skin is well massed and the ointment well rubbed in; the application is renewed after 24 hours. (4) Sutures and Ligatures—The latter are about abandoned as they are often followed by relapse or with eventration. Sutures are applied on the hernial sac or only upon the edges of the ring. This is the best mode; it is the radical cure. With good asepsy and anæsthesia they give good results in even large sized hernias. (5) Forceps and Clamps—These seem to be the preferred method with many. The author recommends the use of a metallic nippers or clamp. Prof. Degivé incises the sac, passes through the edges of the ring two wooden pins and over them applies a clamp, which brings the edges close together and insures the constriction of the sac. Should there be adhesions, they must be divided beforehand. Prof. Hendrickx insists upon the necessity of obtaining, in all cases, a large swelling, which insures the closing of the ring, of avoiding too much pressure, which promotes too rapid sloughing of the skin and gives rise to eventration.—*(Annales de Bruxelles.)*

THE RATIONAL TREATMENT OF CANKER OF THE FOOT [*Prof. Lienaux*].—Canker in the foot is a chronic eczema of the keratogenous membrane; it is constituted, like eczema, by a pure vascular process and manifested by congestion, œdema. This knowledge of the nature of the disease has suggested to the author to recommend in a general way the compression of the tissues which are diseased, and as medical applications those that would contribute to the absorption of the liquid exudation of the lesions, without interfering with the compressive and absorbing action of the dressing. He prefers the Danish mode of treatment, which he resumes as follows: First, the horse must be kept to work. The foot is well pared, the diseased horn is removed, the diseased tissues are carefully exposed, the projecting vegetations are excised and the whole is covered with sali-

cylic acid and a compressive dressing of moist wadding over it. A thick sole of leather is held by the shoe. The dressing is not taken off for three or four days; if there is some discharge, or, on the contrary, for eight days if the dressing or rather the canker is dry. On an average the treatment requires from three to four months. As much pressure is required, it is always advisable to cover the dressing with either liquid pitch or with Venice turpentine, which are held by oakum. Instead of salicylic acid one may use, if he prefers it, chlorohydrate of lime or boric acid.—*(Annales de Bruxelles.)*

VOMITIVE MEDICATION IN NASAL ASTHMA AND AGAINST SPELLS OF COUGH IN MITRAL ENDOCARDITIS OF DOG [*Prof. Lienaux*].—In small breeds of dogs, nasal asthma is quite common. The turbinated bones of dogs do not allow the discharge to escape freely from the nose, and the presence of mucosities gives rise to repeated sneezing and even to dyspnœic attacks which resemble those of asthma. The inhalation of ammoniacal vapors may render the mucosities more liquid and activate their expulsion by stimulating the sneezing. If this method fails, vomitives given for two or three days are followed by recovery. In apartment small pet dogs, already advanced in age, a dry cough by spells may be observed. This is sometimes related to pulmonary tuberculosis, to polypi of the trachea, to œsophageal spiropterosisor, to pulmonary strongylosis; but most ordinarily it is under the influence of mitral endocarditis, with insufficiency of the opening. By auscultation, one will hear a soft, systolic murmur with its maximum at the point of the heart and in its posterior part. The mitral insufficiency has for cause the passive congestion of the lung and the chronic bronchiolitis. Ordinarily, expectorants may calm the cough and some results are obtained with iodides or bromides of potash in large doses. But even then vomitives will do wonders. Prof. Lienaux prefers ipecac or an emetic, but employs specially apomorphine in subcutaneous injections, in from 5 to 10 milligram doses, according to size of the animal. These injections can be repeated once or twice at two days apart. Sometimes one is obliged to resort to them again after a few months.—*(Annales de Belgique.)*

PERITONITIS WITH PURULENT COLLECTION IN THE EPIPLOIC CAVITY OF A YOUNG STEER [*A. Vanden Eeckhout*].—The subject was one year old. Ailing since three days, when he exhibited abdominal symptoms, tympanites (relieved by puncture of the rumen), loss of appetite, of rumination, with fæces

frequently passed and covered with mucosities. On percussion of the abdomen on both sides, in the inferior part, dullness was detected on a horizontal line. Puncture was made, and about seven litres of fluid extracted. The animal was sent to the author, and the same conditions were observed. The steer was dull, temperature 38.2 C.; pulse rather accelerated, 70 to the minute; respiration 22. Rumination stopped, abdomen tympanitic and the walls much distended, implying that peritonitis was also present. The dullness was present on a horizontal line as before. A puncture gave escape to about 50 litres of whitish fluid, which allowed to stand left a quite abundant deposit. The case was one of purulent peritonitis, whose cause was difficult to make out, as they are quite numerous. Death occurred after a few days. At post-mortem it was found that the mediastinal lymphatic glands were very large and tuberculous. The parietal peritoneum showed little alterations, but in its inferior part it had contracted a firm adherence with the great omentum, and in the cavity of this last, which was greatly distended, some 50 litres of purulent fluid were found. The most minute examination of all the organs failed to expose any lesion which could serve to explain the presence of such collection. The point of importance was the error of diagnosis. Indeed, while all the symptoms seemed to justify one of inflammation of the peritoneal cavity, this proved perfectly free from disease. All the lesions were located in the great omentum.—(*Annales de Belgique.*)

On the Importance of Rectal Examination in the Different Manifestations of Colics in Horses [*M. Geerts*].—It is certain that there are cases where one may be justified in omitting it, but with all that one is obliged to acknowledge that rectal examination is a most valuable assistant in the proper diagnosis of colics and one by which the life of patients can be saved. As an evidence, the author relates three cases of great interest. The first observation is that of a case of colic due to dilatation of the bladder, where this organ had to be punctured and emptied through the rectum. An animal had violent colic, was treated by the owner; instead of improving got rapidly worse, and as he was about dead, the author was called. In the presence of the bad aspects of the case, rectal exploration was made at once, and as the hand entered the rectum, the bladder was felt enormously distended. As the horse struggled and made attempts to throw himself down, there was danger of the bladder bursting. No catheter was at hand,

but the writer had the trocar of one of Dieulafoy's aspirators; he plunged it into the bladder through the rectum and removed some six litres of urine. The recovery of the horse was almost instantaneous. All symptoms subsided at once and the horse immediately recovered. The result was certainly due to the rectal examination. The second case recorded is headed "Erratic Abscess of Strangles; Mechanical Arrest of Fæces in the Rectum; Colics." Some two months previous this Shetland pony had strangles and on various occasions abscesses had to be opened in the maxillary space, in the retro-pharyngeal region, etc. He was again taken sick, but this time he had colic. It was not violent, but the abdomen was tympanitic, and he made violent expulsive efforts. Exploration through the rectum was made and a fluctuating tumor was felt hanging from the roof of the pelvis. In manipulating it, it burst and a large quantity of pus was expelled. The horse made some efforts and a greater quantity of pus followed. Continuing the exploration another abscess was felt on the left supero-lateral side of the pelvic cavity. This demanded a firm pressure of the index finger to penetrate into it, which was followed by an abundant discharge of pus. The horse was then relieved of a mass of fæcal agglomeration, weighing about 600 grams. Ulterior treatment was very simple and followed by rapid and final recovery. The third case was one where no treatment was resorted to, but where rectal examination justified the advice of having the animal destroyed. He had colics due to mechanical stoppage of fæces in the large and small colons, resulting from the presence of generalized melanotic growths in all the organs of the body.—(*Annales de Belgique.*)

Dr. J. H. McNeil, Dean of the Division of Veterinary Medicine of the Iowa State College, was chief veterinarian, in charge of all animals and the horse exhibit ring at the recent International Live Stock Show at Chicago, December 1st to 8th, 1906.

Simple Blacksmith.—When a blacksmith was asked how much he would charge for shoeing a horse he demanded only a cent for the first nail, two cents for the second nail, four cents for the third nail, and so on through the thirty-two nails in the horse's four shoes. The owner of the horse at once accepted the terms of the contract, but found it impossible to pay the bill, for the amount reached the sum of 2,984,257,298 cents by the time the job was completed.

ARMY VETERINARY DEPARTMENT.

THE ARMY BILL IN DANGER.

ITHACA, N. Y., Jan. 21, 1907.

Editors American Veterinary Review:

DEAR SIRS:—I hear from Drs. Jewell and Turner that the Army Bill is again in peril, having been first delayed that members might scrutinize it, and then doomed by the word of the Speaker to remain in committee during the present short session. A bill favored by the Minister of War and Army Board should be accepted at its face value, unless some unworthy feature or motive can be shown. In the latter case we would be the first to oppose it. The time is now short, but if you can still insert in the February REVIEW a call to all members of the A. V. M. A. to promptly appeal to their Representatives and Senators it might yet be possible to bring the bill to a successful issue before March. Very truly yours, JAMES LAW,

President American Veterinary Medical Association.

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THE COURSE IN TROPICAL MEDICINE AT LIVERPOOL.

FORT MYER, VIRGINIA, Jan. 6, 1907.

Editors American Veterinary Review:

DEAR SIRS:—Having recently returned from Liverpool, England, a few remarks pertaining to the University which I attended for several weeks by order from the Secretary of War, taking a course in the School of Tropical Medicine, and also some information about the British Army Veterinary Department, may be of interest to the veterinarians of our service.

This course consists of lectures in pathology, bacteriology, entomology, parasitology, meat inspection and work in the laboratories, two lecturers being assigned to this work (Drs. Annett and Newstead). This course is intended more for medical students than for veterinarians, as the British Army Veterinary Department was not represented, although three medical officers are members of the present class. I would advise any of our army veterinarians that intend taking this course to ask for at least a three months course, as six weeks is entirely too short a time to get much out of a course of this kind. The tui-

tion fee, which you must pay yourself, is $50.00 for three months, commencing either in October or January. During this school detail you are given full pay, but not allowed commutation of quarters, and, as living expenses are high in England, it makes an expensive detail, and I think a post-graduate course at some of our Eastern colleges would be equally as beneficial, as you get but little pertaining to tropical diseases.

Dr. Nockolds, of the 1st Cavalry, who attended this course with me, read a paper on "surra," which was well received by both instructors and students, as none present had ever had any practical experience with "surra," and they took notes throughout the reading of his paper. The Doctor has asked to be ordered to Africa to work with Prof. Kock, who now believes he has a cure for "sleeping sickness," which, if true, should solve the "surra" problem.

While in London, I had an opportunity of visiting the Horse Guard (regulars) that are stationed at White Hall, and noticed a number of changes from our cavalry service, as regards shoeing, feeding, and general care of their mounts, which are far superior to those we use and more uniform, everything being clipped. Their stables are built from a hygienic standpoint —iron mangers, tile feed boxes and tile floors, with glazed bricks for sides and ceilings, so that in case of any contagious diseases a stall or stable may be thoroughly cleansed.

The Veterinary Department is under one director-general, who has the rank of a major-general. Veterinarians enter the service as a 1st lieutenant, being promoted to a captaincy after five years' service; after ten years as captain he receives his majority. Lieutenant-colonels are selected by the Secretary of State from the majors having fifteen years' service, besides three years spent in India, and colonels are selected from the lieutenant-colonels having five years in that rank. The veterinarian's uniform corresponds to the medical officer, the only difference being in the collar device.

Their examinations for promotion are on the following subjects: Meat inspection, diseases of cattle and horses, shoeing, practical work with the microscope, and military saddlery. All veterinarians are given a course at Aldershot (their military school) before being assigned to a command.

I also had the good fortune while in London of being present at the opening of the Smithfield Live Stock Show, which is supposed to be the finest in the world, the King and Prince of Wales both being present, and the Prince of Wales acted as

the presiding officer at the opening of the club. They excel us in the breeding of cattle and sheep, but I consider our hogs superior to any noticed there.

Our laws regarding the inspection of meat and milk are more rigid than theirs, and tuberculosis is a common disease with them.

The King's stables at Buckingham Palace and Windsor Castle are under the care of Prof. W. Owen Williams, and are both palaces themselves. The horses used are the best obtainable. Cleveland bay seems to be the favorite breed, and the Irish hunter used for saddle purposes. I saw but little difference in their prices from ours for the same type of horse.

WALTER FRASER,
Veterinarian, 13th Cav.

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THE ARMY VETERINARY BILL IN CONGRESS.

(*From the Army and Navy Journal, December 22, 1906.*)

The Senate on December 18 considered without final action S. 3927, which relates to the veterinary service of the Army. Explaining the bill Senator Warren said: "Formerly veterinary surgeons were either taken from the enlisted force or the Department hired as many 'horse doctors,' as they were termed, as were necessary to supply the regiments of Cavalry and Artillery. That was found to be a poor policy, because the men hired for that purpose were not sufficiently educated and capable. A few years ago a law was enacted which provided that a certain number of the veterinary surgeons should have the pay and allowances of second lieutenants, and outside of that number a certain number of others should be employed at $75 a month. That plan has been found to be inefficient, and is growing more and more so. To-day horses are high in price and hard to get. They should have good care or we lose a great deal of the money invested in them, because of the ravages of disease and death. There is a great demand for good veterinary surgeons. There is also a great demand for veterinarians with sufficient scientific education to enable them to act as inspectors in the Department of Agriculture. The pending bill proposes to take the old force now in Army service and discharge them all, except such as have been found satisfactory and efficient and have been in the Service fifteen years; these to be commissioned as first lieutenants without further examination, they having had fifteen years' service and been found satisfactory. Then so many of the other

old employees as may pass the examination, physical, mental, and otherwise, may be admitted. To make up the balance of the force necessary, citizens of the United States, between the ages of 21 and 27, single, and graduates of veterinary colleges, may apply, and, upon passing the examination, receive commissions and all the pay and allowances of second lieutenants. But they do not have the rank. After ten years' satisfactory service these men receiving pay and allowances of second lieutenants may be promoted to the pay and allowances of first lieutenants, and they may also have at the end of their active service, when 64 years old, retirement as first lieutenants. That is really all there is to the bill."

Senator Hale asked whether the bill does not establish a new corps—a veterinary corps in the Army—and asked that it lie over to give time to examine it. Senator Lodge in reply said that some years ago he had opposed a bill which did create a veterinary corps, but that the present bill he had found on careful examination "establishes no corps and confers no rank." "It does not even squint at the establishment of a corps," added Mr. Warren. He went on to explain that at the present time a certain percentage of the veterinarians in the Army are commissioned as veterinarians, with the pay and allowances of second lieutenants; the balance are simply employed civilians. This bill proposes, instead of having part of them "hired men" and the other part second lieutenants, that they shall start with the pay and allowances of second lieutenants. A clause of the bill authorizing the President "to appoint and immediately retire" certain veterinarians will apply, Mr. Warren said, to only two men, one over seventy and the other sixty-seven years old. He gave notice that he intended to bring the bill up again soon and then hoped for its final passage.

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PERSONAL NOTES.

DR. CHARLES H. JEWELL MARRIED.—On Saturday, Dec. 22, Dr. Jewell, Veterinarian U. S. Army, Fort Riley, Kansas, was married to Miss Anna Oesterhaus, of Fort Riley, and left on a tour of the East, to return and take up their residence at the Fort by Jan. 15. The bride is a sister of Dr. John Oesterhaus, veterinarian, now stationed in the Philippines. The "Army Veterinary Department" and Dr. Jewell's many friends throughout the veterinary ranks of the country, wish him much joy in the connubial state.

TUBERCULOUS INFECTION BY INGESTION OF GERMS.

(*Special Dispatch to New York Times.*)

Washington, Jan. 6.—A report on the relation of tuberculous lesions to the mode of infection, submitted to the Secretary of Agriculture by Dr. E. C. Schroeder and W. E. Cotton, of the Bureau of Animal Industry, contains information resulting from extensive experimentation which goes a long way toward upsetting the popular notion that pulmonary tuberculosis, or consumption, only follows the direct inhalation of the tubercle bacilli from dried sputum directly into the lungs.

Tuberculosis was produced in the lungs of a calf and three hogs, in the course of these experiments, by inoculation near the end of the tail. This indicates, in the view of the experts, that the lungs may readily become the seat of tuberculous disease, no matter through what channels the bacilli gain entrance to the body, and that the location of lesions in the lungs can no longer be considered as reliable evidence that the infection entered by means of the respiration.

Too much importance has been attached to the agency of dried sputum in the study of tuberculous infection, the investigators say, and too little to the more serious danger from fresh or moist tuberculous material, which enters human food in many ways, one of the commonest of which is attributable to the tuberculous dairy cow. Evidence has been presented to support the contention that the lungs of these cows are more directly exposed to the infection through the lymph channels and blood current than in any other way.

In the experiments with cattle and hogs subcutaneous injections of virulent tubercle bacilli were made as near the ends of the tails of the animals as possible, because this point was the furthest removed available portion of the body from the lung, and the location from which the infection of the latter seemed least likely to occur.

Twenty-three days after a healthy calf had been inoculated with the virulent preparation the animal died. Post-mortem examination showed that the lungs were badly infected, while the other organs apparently were in a normal condition. The lungs presented a perfect picture of a fatal miliary tuberculosis. The hogs which were inoculated were killed, and the same conditions were found in the lungs.

The experimenters believe that in these cases the bacilli

were either taken up directly by the capillaries and thence carried to the lungs by means of the venous circulation, or else by the lymphatics into the veins and thence to the lungs. The report says:

The practical conclusion to be drawn from the results obtained is that ingestion is a greater danger than the respiration of tubercle bacilli, especially as the tubercle bacilli may be ingested in the fresh state in which they are expelled from tuberculous lesions and cannot be respired until they have been subjected to various attenuating processes. The substance in which tubercle bacilli are enveloped or imbedded when they leave the infected organs under ordinary and usual conditions requires considerable time before it can be sufficiently dried and pulverized to float in the air. Bacilli do not rise from moist surfaces and float in the air. The complete desiccation that must occur in advance of pulverization is either a comparatively slow process or is hastened by agencies, like the heat from the direct rays of the sun, that have a potent influence against the vitality of pathogenic bacteria.

Sputum, for example, dries on the surface in a way that coats it with a protective membrane through which evaporation progresses slowly; it is a very adhesive substance, and becomes more so during the first stages of drying, and it must be exposed when thoroughly dried to actual attrition before it can be detached from the surface on which it has dried and reach a sufficient disintegration to be blown about as dust.

The experimenters summarize their conclusions as follows:

Tuberculosis is a disease contracted through the ingestion of tubercle bacilli.

The lung is the most frequent organ affected, independently of the point at which the infectious material enters the body.

Tuberculous infection may pass from one part of the body to another remote to it without leaving a chain of lesions to mark its path.

Fresh tuberculous material has the highest, and dried and pulverized material a doubtful significance.

Tuberculous material from cattle has the highest virulence for all tested species of the mammalian kingdom, to which man anatomically and physiologically belongs, and tuberculous material from man has a lower virulence.

Man is constantly exposed to fresh tuberculous material in a helpless way through his use of dairy products from tuberculous cows and cows associated with tuberculous cattle.

"It seems from this array of facts," the report says, "every one of which is based on positive experimental evidence, that we should feel no doubt regarding our plain duty, which is, no matter what other measures we adopt in our fight against tuberculosis, not to neglect one of the chief, if not the most important, source of infection—the tuberculous dairy cow."

SECRETARY LYMAN was at the meeting of the Veterinary Medical Association of New Jersey doing missionary work for the A. V. M. A.

THE Fasig-Tipton Co.'s sales of thoroughbreds and trotters in 1906 aggregate upward of $2,500,000. Of this amount about $750,000 were paid for harness horses and $1,750,000 for runners. With one exception the year's business is the largest in the history of the concern.

DR. RICHARD P. LYMAN, Secretary of the American Veterinary Medical Association, is preparing a list of all veterinarians in the United States and Canada who are eligible to membership in that Association. He states that, although he has not completed his calculations, it appears that there are about 3,800 in the two countries. When it is remembered that the membership of the A. V. M. A. is only slightly in excess of 600, it is apparent that much work remains to be done in bringing this large number under the influence of the international organization. Dr. Lyman is doing splendid work in the Secretary's office, and the Association was fortunate in securing him.

COMMISSION ON MEAT INSPECTION.—A commission has been appointed by Secretary Wilson to meet in Washington February 4, to consider the revision of the meat inspection regulations of the Department of Agriculture, which pertain to the rules and regulations to govern the disposition of carcasses affected with various diseases and abnormal conditions. The body to which these questions will be referred is to be known as "A Commission on Meat Inspection." The members are: Dr. W. H. Welch, professor of pathology, Johns Hopkins University; Dr. C. W. Stiles, Chief Division of Zoölogy, United States Public Health and Marine Hospital Service; Dr. Leonard Pearson, Dean, Veterinary Department, University of Pennsylvania; Dr. L. Hekteon, professor of pathology, University of Chicago; Dr. Joseph Hughes, President of Chicago Veterinary College; Dr. V. A. Moore, professor of comparative pathology, Cornell; Dr. M. J. Rosenau, Director of Hygienic Laboratory, U. S. Public Health and Marine Hospital Service.

CORRESPONDENCE.

THE VETERINARY ALUMNI OF NEW YORK UNIVERSITY.

NEW YORK, Jan. 12, 1907.

Editors American Veterinary Review:

DEAR SIRS:—Occasionally it becomes the duty of association officers to jog the memories of willing but neglectful members to the first and constant duty to their alumni society, and I ask you to kindly publish this letter, so that our many alumni may have the opportunity to respond to this request, thereby helping the officers, the society, and themselves.

Probably the proudest moment of our lives is when we have earned the privilege of becoming a member of our college alumni society. Many of us remain true to our alma mater, while others occasionally remember that they are children of the school, but forget altogether the society and its important work. Consequently, without their support, the society ceases to flourish, and many well-laid plans stagnate, while a little forethought would perfect them, to the great benefit of every alumnus. This is not difficult to understand when we realize that alumni societies are maintained solely for the benefit of the alumni, and that all the funds are used in their interests.

Many universities point with pride to their alumni societies, strong in membership, with well-attended meetings, and which are a bulwark of strength to their alma maters. Can we say as much for our Alumni Association of New York University? I think not. When the New York College of Veterinary Surgeons and the American Veterinary College consolidated and became part of the time-honored New York University, their respective alumni societies also united and became the veterinary branch of New York University Alumni Association; yet how few have shown their appreciation of this additional honor in a substantial way. Is it a general lack of interest or of definite information that has kept so many alumni outside of the fold? Many of the University alumni associations issue handsome certificates of membership, which add dignity to those which have been conferred by the college, and it has long been our intention to issue a similar certificate; but, as may be readily understood, lithographic stones are expensive, but with the support of every alumnus this and like benefits may be successfully executed without unnecessary delay.

The dues are one dollar annually, and it is the plain duty of every alumnus to become an active member and help us to accomplish something worth while, at the same time placing the veterinary branch of the N. Y. U. A. A. where it should be—second to no alumni society.

The time is fast approaching when we will again arrange our professional duties so that one evening may be set apart for recreation, the meeting of old friends, and the many pleasures of an annual alumni banquet. To those who have not attended in the past, I desire to say that this is one evening they cannot afford to miss, and I want all to make an effort this year to be with us. The committee of arrangements is endeavoring to secure a place to hold the banquet which will be convenient to out-of-town members and to have the price per plate within the easy reach of all. Due notice of date and other particulars will be given through the REVIEW.

Now, then, fellow-alumni, send in your dues for this year ($1), which will be acknowledged by receipt from the Secretary.

THEODORE F. KREY, *Secretary*,
141 W. 54th Street, New York City.

PROPOSED GREAT VETERINARY COLLEGE FOR THE WEST.

CHICAGO, ILL., Jan. 12, 1907.

Editors American Veterinary Review:

DEAR SIRS:—In reply to your note asking me to obtain all the details possible of the proposed veterinary school to be established in connection with the University of Illinois, I beg to state that I have made an investigation, and herewith submit all facts that are known to the professional public outside of those immediately concerned.

It is proposed that there shall be established under the direction of the University of Illinois a Veterinary College, either within or in close proximity to the Union Stock Yards of Chicago, the exact site not having yet been chosen. The especial purpose of this proposed new institution is the training of "expert veterinary inspectors" for service in the U. S. Bureau of Animal Industry, although it is admitted that its graduates are to be thoroughly trained in every branch of the science. The proposition is said to be the direct result of a recent report to the German government by a special envoy sent to this country to study conditions in the packing industry. This report is stated to have contained strictures upon the quality of our in-

spectors, who were stated to be deficient in special training for the work of inspection. In the new college original research work will be taken up in connection with the medical department of the University, and, with the wonderful facilities afforded by the Union Stock Yards, many valuable results should be obtained.

The financial backing of the new college is the packing interests in Chicago, which, on December 13th, offered the University of Illinois $250,000 for the erection of buildings and the equipment of a veterinary college. In addition to this, they will give a ninety-nine years lease of sufficient land for the erection of the buildings and the future growth of the college. The State Legislature will be asked for an appropriation only sufficient to cover the actual running expenses of the institution.

The packers have stipulated that the University is to secure a veterinary faculty which will be unexcelled, and Germany and France will probably be asked to contribute to it.

The members of the veterinary profession of America welcome every institution which still further elevates the high standard of its chosen profession. Very truly yours,

B. T. WOODWARD, V. M. D.,
U. S. Bureau of Animal Industry, Chicago, Ill.

THE "SCREW-WORM" FLY.

BATON ROUGE, LA., Jan. 10, 1907.

Editors American Veterinary Review:

DEAR SIRS:—The remarks I made in my paper, "Our Insect Enemies," in connection with the habits of the "screw-worm" fly (*Chrysomyia macellaria*), viz.: "They are widely distributed now, and always are, to a more or less considerable extent, but I do not recall having heard of their attacking the living animal since the years alluded to," had only a local, or, perhaps, sectional reference, and were not meant to convey the impression that these flies might not be, or were not, found attacking animals in other parts of the world, since the years to which I made allusion—1891 and 1892. The statement was evidently a little ambiguous, or, at least, capable of some misinterpretation, as is shown by the letter of Dr. Donovan, in the January number of the REVIEW. Dr. Donovan's experience in Cuba with this dipteron is extremely interesting, and only goes to emphasize the importance of the rôle played by insects as

disease-producers and transmitters. I can fully appreciate the extent of the destructive work of these flies in Cuba, so graphically described by the Doctor, as I had very similar experiences in Louisiana during the years mentioned—but not since. And the statement I made was based upon this fact, which had, of course, a local application only. I may say that I had many cases (similar to the one cited in Dr. Donovan's communication) where the sheath was literally filled with larvæ, and also where the latter were embedded in masses in the glans penis, and having to be picked out with forceps after destroying them with such solutions as creolin, bichloride, etc. For several years after this fly-invasion, it was an everyday occurrence to see cattle minus portions of their tails (often the entire organ) as the result of larvæ hatched at, or near, some blood-speck or abrasion on some part of the caudal appendage; and also to witness horses and mules with one or both ears drooping down, where the larvæ had destroyed the supporting structures. In fact, one was not surprised at seeing almost any kind of deformity in animals that could possibly be occasioned by "screw-fly" larvæ. At the risk of appearing a little tiresome on this particular topic, I would just like to add, that besides the enormous destruction to stock caused by this fly, there are some other features connected with it that were quite interesting, and which came under my own observation and knowledge. One was the case of a mule brought to our University veterinary infirmary which had had two parallel cracks, about an inch or so apart, running down, or up, probably the latter, the front of the hoof, with the piece of intervening horn broken off, and a mass of granulation tissue (the sensitive tissue) projecting like a small teat or pap. I had decided to operate, either with the knife or cautery—I forget now which, as it is some fifteen or sixteen years ago—when I found, to my dismay at the time, that the "fly" had got ahead of me, and that the larvæ were already at work. My first impulse was to destroy them, but on second thought I decided to allow them to remain and see if they would not be able to render some surgical aid in the removal of the neoplasm. To my agreeable surprise, they accomplished their work in a masterful manner, levelling down the parts as well, if not better, than I could have done by surgical or other means. Of course, the larvæ had to be watched very closely, as they worked fast, and when they had completed their part of the operation to my satisfaction, I politely dismissed them with a "fee" of bichloride solution. After giving to the foot the

necessary after-attention, the horn grew down and the animal made an excellent recovery.

Another instance where the fly "was made use of" at that time was in the case of old chronic fistulous tracts, as in the neighborhood of the withers, for example. Whenever the larvæ attacked such parts, and were carefully watched, and killed before doing any harm, they usually destroyed the adventitious tissue present, and seemed to leave the parts in a condition to heal, with the aid, of course, of disinfectant and antiseptic after-treatment. Although I did not have one of these cases under my own personal supervision, I knew of several which resulted favorably. Rather useful employment for such a destructive pest.

In conclusion, let me say that, although I believe a climate such as prevails in Cuba is much more favorable to the propagation and development of certain forms of insect life, such as the one under consideration, than is that in more temperate regions, it would be difficult to imagine a worse state of affairs than that occasioned by the "screw-worm" fly in Louisiana during the two years alluded to in the early 90's. But, as previously stated, its destructive work ended then, so far as this state is concerned; and it was this fact I had reference to when I made the statement quoted by Dr. Donovan. I may say, however, that I am now rather glad, than otherwise, that my remarks were, apparently, misinterpreted, as the experience in Cuba, given by Dr. Donovan in his communication, is most instructive, and cannot fail to have been read with a great deal of interest by REVIEW patrons; besides being of value in further emphasizing the importance, to the profession, of a better knowledge of "Our Insect Enemies." W. H. DALRYMPLE.

TRYPANOSOMA LEWISI IN CUBA.

SANTIAGO DE LAS VEGAS, CUBA, Dec. 13, 1906.

Editors American Veterinary Review:

DEAR SIRS:—For more than two years, ever since I took charge of the Department of Animal Industry of the Cuban Republic, we have been watching carefully for evidence of any trypanosomatic disease among domestic animals. So far, I am happy to say, we have only found one species, *Trypanosoma lewisi*, in the blood of the common Norway rat, *Mus norvegicus*. We have examined the blood of 136 rats; of these 31, or nearly 23 per cent., harbored *T. lewisi* in the blood. Only one-fifth of

the infected rats were adults. One young rat about two-thirds grown was taken Feb. 17, 1906, and was kept under observation. At that date its blood was simply swarming with the parasites. On July 11th the parasites had begun to disappear, and on July 30th but few could be found. On August 30 they had disappeared entirely, and as no more were observed the rat was destroyed Dec. 5, 1906.

In many of the infected rats the blood was so filled with the parasites that it seemed impossible that an animal could live, but, so far as we could observe, the rats seemed to suffer no inconvenience from their presence. N. S. MAYO.

AT the annual meeting of the New Jersey Veterinary Medical Association, at Jersey City, on the 10th ult., there were visitors from four states—New Jersey, New York, Pennsylvania and Connecticut. Dr. E. L. Loblein, of New Brunswick, was elected President; Dr. Wm. Herbert Lowe was retained as Secretary, and Dr. Thomas E. Smith was placed in charge of the funds. The arrangements for the meeting were ideal, and reflect credit upon the local committee, of which Dr. Smith was chairman. His membership in the Knights of Columbus enabled him to entertain his friends at the Columbian Club, and he did so royally. The lodge room made an ideal convention hall, while the banquet room was utilized for the dinner, which was elegant in all appointments. The Association goes back to Asbury Park for its midsummer meeting, when a feature will be a clinic.

THE VETERINARY PRACTITIONERS CLUB OF HUDSON CO., N. J.—This is the name of a new club organized over in Jersey. The members decided to call it a club instead of an association, as their number is small and they wish to steer clear of rigid formalities so as to throw off a feeling of restraint when they meet together for an exchange of views on topics of professional interest. Dr. T. E. Smith, of Jersey City, was chosen President, and Dr. A. F. Mount, also of Jersey City, Secretary and Treasurer. The club will be in affiliation with the Veterinary Medical Association of New Jersey, incorporated in the year 1885 under an act of the Legislature for the promotion of veterinary science and art. The club received an invitation from the Veterinary Medical Association of New York County to hold its monthly meetings in conjunction with the latter, and at the January meeting a number of the members were present, including the President and Secretary.

BIBLIOGRAPHY.

SURGICAL AND OBSTETRICAL OPERATIONS. By W. L. Williams, Professor of Surgery and Obstetrics in the New York State Veterinary College. Embodying portions of the "Operationscursus" of Dr. W. Pfeiffer, Professor of Veterinary Science in the University of Giessen. Second Edition, revised. Ithaca, N. Y.: Published by the Author. 1907.

It seems but a very short time since we had occasion to speak of the first edition of Dr. Williams' little treatise upon surgical operations, and the author must feel great gratification in being forced to issue another edition so soon, as it shows a decided appreciation of his efforts in improving and popularizing a number of very useful operations. Dr. Williams has made a decided impression upon modern surgery by the original study he has given to a number of procedures which are described in European works and by some which are original with him. Thus, while the Bayer operation for quittor belongs to the surgeon whose name it bears, it was not practiced to any extent in America until Williams popularized it by demonstrating the advantages which it possesses. So, too, with resection of the flexor pedis tendon, which, although described in other works on surgery, has been greatly simplified and improved by Williams' technic. The operation for poll-evil is, so far as we can discover, original with Williams, although it has been stated to have been previously described, while trifacial neurectomy, oöphorectomy through the ballooned vagina with special ecrazeur, and quite a number of others must always date back to his original description.

In the present edition, the author has made many additions of considerable value. For instance: There is a decided amplification of his former article on trephining of the sinuses; a complete change in the technic of amputation of the tail, as well as the method of amputation of the penis; he has introduced the operation for roaring which he has been performing for the past year (excision of the vocal cords and ventricle of the larynx); a new procedure in the castration of ridglings, etc. His standard obstetrical operations remain as in the first edition, with the exception of some amplifications in technic.

One of the greatest charms about Williams' book is the high quality of the illustrations, which are the best we have seen in any work upon the subject. He has expended both time and money to have them as near perfection as possible, and his printers have successfully seconded his efforts, for the quality of the mechanical construction of the work is beyond criticism.

We hesitate to compute the cost of a complete work upon surgery by Williams if the same character of illustrations were used, yet the value of such a work would be inestimable, and it is to be hoped that some day we will have it.

The additional matter is well worth the price charged for the book, so that those who are in possession of the first edition will not go amiss if they purchase the newer revision, and those who have never had it at all, are decidedly at a disadvantage in practicing the art of surgery upon domestic animals. (R. R. B.)

OBITUARY.

F. E. WILLIAMS, V. S.

Following an attack of peritonitis, Dr. F. E. Williams, of Ovid, N. Y., died on December 26. He graduated from the Ontario Veterinary College in 1889, and had been in practice in Ovid since that time.

DAVID MCKIBBIN, JR., U. P. '06, is in general practice at San Diego, Cal.

THE ALMOST HUMAN DOG.—The dog undoubtedly exhibits more human traits than any other lower animal, and this by reason of his long association with man. There are few of our ordinary emotions that the dog does not share, as joy, fun, love of adventure, jealousy, suspicion, comradeship, helpfulness, guilt, covetousness and the like, or feelings analogous to these—the dog version of them. I am not sure but that the dog is capable of contempt. The behavior at times of a large dog toward a small, the slights he will put upon him, even ejecting his urine upon him, is hardly capable of any other interpretation. The forbearance, too, which a large dog usually shows toward a touchy little whiffet, never resenting its impudent attacks, is very human. "A barking dog never bites" is an old saying founded upon human nature as well as upon dog nature. The noisy blusterer is rarely dangerous, whether man or dog. I do not agree with Stevenson that the dog is a snob. The key to a dog's heart is kindness. He will always meet you half way and more. I have been asked why the farm dog usually shows such hostility to tramps and all disreputable-looking persons. It is not their looks that disturb the dog, but their smell—a strange, unknown odor.—*(John Burroughs in the Outing Magazine.)*

SOCIETY MEETINGS.

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The 24th annual meeting of this Association, held in the parlors of the Victoria Hotel, Chicago, December 4 and 5, 1906, was called to order at 10 o'clock A. M., Dec. 4, by the President, Dr. W. H. Welch, of Lexington, with the following officers, members, and visiting veterinarians present:—Drs. W. H. Welch, Lexington, President; C. C. Mills, Decatur, Vice-President; F. H. Barr, Pana, Secretary; George B. Jones, Sidel, and J. H. Crawford, Harvard, of the Board of Censors; and Robt G. Walker, Chicago, Treasurer. Members and visiting veterinarians as follows:—Drs. J. M. Kaylor, Barry; John T. Rayn, Chicago; W. J. Martin, Kankakee; H. A. Presler, Fairbury; F. E. Jones, Rochelle; J. T. Nattress, Delavan; B. F. Hudson, Mowequa; J. S. Hollingsworth, La Salle; R. M. Story, Princeton; C. G. Glendenning, Clinton; O. F. Butterfield, Libertyville; W. H. Weathers, Magnolia; D. L. Travis, Vandalia; H. C. Singer, Cowden; C. R. Andrew, Atlanta; G. M. Predmore, Avon; J. F. Gillispie, Tuscola; Carl H. Yoder, Watseca; J. R. Taylor, Austin; A. G. Gieske, Barrington; J. G. Hayes, Freeport; Jacob Mau, Herscher; P. H. Johnson, Marion; T. J. Gunning, Neponset; R. E. Nesbitt, Lincoln; B. T. Woodward, Oxford, Pa., Recording Secretary Pennsylvania S. V. M. A.; C. L. Lumby, Chicago; R. F. Hoadley, Yorkville; B. T. Webster, Winchester; E. A. Jinkens, Shelbyville; W. E. Gilbrath, Wheaton; M. A. Hollingsworth, Rock Island; N. P. Whitmore, Gardner; N. W. Kyle, Colfax; Wm. F. Myers, Ft. Wayne, Ind.; W. B. Lewin, Russell; C. C. Mills, Decatur; H. D. Chamberlain, Belvidere; A. H. Baker, Chicago; C. F. Griiner, Chicago; A. C. Worms, Chicago; L. C. Tiffany, Springfield; W. F. Weese, Ottawa; H. F. Pegan, Cochranton, Pa.; James E. Stansbury, Middleport, Ohio; C. L. Passimore, Huntley; A. M. Wray, Richmond; G. W. Evert, Galena; C. S. Hayward, Mattoon; T. S. Hitch, Griggsville; W. W. Lichty, Woodstock; M. M. Fletcher, Bethany; C. C. Danber, Sturgis, Mich.; N. I. Stringer, Paxton; J. F. Roub, Monroe, Wis.; W. V. Nesbitt, Maroa; Geo. P. Frost, Chicago; M. E. Gleason, Gibson City; J. C. Harland, Mukwenago, Wis.; John Scott, Peoria; J. Fred Stoner, Bement; Chas. A. Pierce, Elgin; T. O. Sheasburn, Walnut; Andrew English, Chicago; W. G. Hassell, Grayville; P. H.

Marsh, Tonkawa; H. J. Mongeau, Manteno; C. D. Maulfair, McNabb; O. H. Lintner, Mendota; S. S. Baker, Chicago; Joseph Hughes, Chicago; E. L. Quitman, Chicago; Philip Quitman, Chicago; L. A. Merillat, Chicago; E. Merillat, Chicago; J. M. Parks, Chicago; R. C. Moore, President Kansas City College.

Minutes of the last meeting, held at Bloomington, July 12, 1906, were read and approved.

The following applications for membership were read, and, upon ballot being spread, were all declared elected to membership: Drs. M. H. McKillip, Chicago; Joseph M. Kaiser, Chicago; John Millar, Chicago; John Henderson, Chicago; Albert G. Gieske, Barrington; Oscar Silfver, Peoria; Frank T. McMahon, Chicago; T. J. Menestrina, East St. Louis, Ill.; C. L. Sawyer, Kankakee; H. M. Rinehart, Blandinville; C. M. Walton, Rantoul; J. F. Gillispie, Tuscola.

President W. H. Welch now delivered the annual address, which was at some length and touched upon many matters of importance to the Association.

Under head of new business, Dr. W. J. Martin, of Kankakee, placed in nomination for honorary membership Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, Washington, D.C., and upon vote of the Association Dr. Melvin was unanimously elected to honorary membership.

At this time attention was called to the fact that John McDonald, an oldtime honorary member of this Association, should always be designated by the addition to his name of the degree initials "M. D.," on account of there being an empiric in the locality who boasted of being an honorary member of this Association on account of his name being John McDonald. A motion was made that the incoming President and Secretary be instructed to have printed revised By-Laws and list of membership, the number to be left to their discretion. Upon vote, motion carried.

Dr. George B. Jones now opened a discussion upon the violation of the law regulating the practice of veterinary surgery and medicine, followed by Drs. R. G. Walker, W. J. Martin, N. P. Whitmore, W. H. Welch, J. F. Ryan, J. T. Nattress, J. R. Kelso, and F. H. Barr. A motion was now made by Dr. George B. Jones, supported by Dr. B. F. Hudson, that the President appoint a committee of three to draft suitable resolutions to cover the subject as discussed and that the incoming Secretary be directed to send a copy to every veterinary college in North

America under seal of the Association. On vote, motion was carried, and President Welch appointed Drs. Jones, Martin and Ryan to draft resolutions as directed, and to report when ready.

At 12 o'clock, noon, meeting adjourned for lunch, to reconvene at 1.30.

Called to order at 1.30 P. M., by President Welch.

Reading of papers being next in order, Dr. W. H. Weathers, of Watseca, read a very able paper entitled "Arecoline Compared with Eserine in Treatment of Colics."* This paper elicited quite an animated discussion, in which the following veterinarians participated: W. B. Lewin, N. I. Stringer, C. G. Glendenning, Robt. C. Moore, B. T. Woodward. Dr. Moore, who is President of the Kansas City Veterinary College, after taking part in the above discussion, delivered a very able and instructive talk pertaining to the profession in general. Dr. Woodward, Recording Secretary of the Pennsylvania S. V. M. A., made a most pleasant address, setting forth the status of the profession in Pennsylvania, which was most enthusiastically received. Dr. William F. Myers followed Dr. Woodward with a pleasant talk, which the I. S. V. M. A. most highly appreciated. Discussion of Dr. Weathers' paper was again resumed by Drs. S. S. Baker, George B. Jones, W. B. Galbraith, J. T. Nattress, W. J. Martin, and C. C. Mills. On motion, discussion closed.

Dr. Bentley F. Hudson read a paper entitled "Texas Fever," which was discussed at some length by Drs. Woodward, Mills, and Stringer. On motion, discussion closed.

Dr. Carl H. Yoder's subject, "A Case of Laminitis," brought forth a long and interesting discussion by Drs. Jones, Presler, Glendenning, Baker, Martin, Mills, Nattress, Stringer, Kelso, and Crawford. Upon motion, discussion closed.

Dr. H. C. Singer's paper on "Agalactia in the Mare"* was especially well prepared and brought forth a most animated and instructive discussion, which to the country practitioners was of inestimable value, in which Drs. Mills, Martin, Nattress, Presler, S. S. Baker, and Stringer took part.

Dr. Henry Mau's subject was "Foul in the Sheath." This paper was well written and the Doctor showed conclusively that the condition was due entirely to phymosis, which fact was brought out by a lengthy discussion by the following: Drs. Mills, Martin, A. H. Baker, Nesbit, Jones and Nattress.

* Published elsewhere in this number of the REVIEW.

The committee appointed to draft resolutions relative to violation of Veterinary Practice Act being ready to report, submitted the following:

"WHEREAS, It has come to the knowledge of this Association that students of veterinary medicine and surgery are engaging in the practice of said science during their freshman, junior, and senior years before graduating or receiving a permit to practice by the Board of Veterinary Examiners of this state, and

"WHEREAS, It is the opinion of this Association that such attempt of veterinary students to engage in general practice before having properly fitted themselves for the same are violating the law of their state and are thereby laying themselves liable to prosecution under said law, and

"WHEREAS, It is the opinion of the members of this Association that the faculties of the veterinary colleges of this and adjoining states should make it mandatory upon their students that they spend the summer season between college sessions under the immediate supervision of a graduate of a recognized veterinary college, and

"WHEREAS, It has come to the knowledge of this Association that certain members of the veterinary profession in this state have been making a practice of employing veterinary students and opening offices for same in separate towns to engage in the practice of veterinary medicine and surgery, and

"WHEREAS, Any member of this Association who has been known to have engaged in such procedure shall be liable to suspension or expulsion from this Association, and

"WHEREAS, It is the firm opinion of this Association that no person who is not a graduate of a recognized veterinary college and holding a license from the Board of Veterinary Examiners is entitled to engage in practice in this State, unless under the immediate supervision of said licensed practitioner;

"*Resolved*, That a copy of these resolutions shall be mailed to each veterinary college in North America, and also be spread upon the records of this Association.

"Signed { George B. Jones,
John F. Ryan,
W. J. Martin, *Committee.*"

The resolutions were debated by Drs. A. H. Baker, Jones, Stringer, Glendenning, Walker, Scott and Barr.

On motion, the Committee was discharged and resolutions balloted upon. Adopted by a majority vote, and the Secretary

was instructed in accordance with the original motion to send a copy to every veterinary college in North America.

The following names were read as applicants for membership: Drs. Chas. Lewis Lumby, Chicago; J. R. Taylor, Austin; F. B. Webster, Winchester. On ballot, all were declared elected.

The Secretary read letters from the following: F. F. Brown, Vice-President of the Kansas City Veterinary College, expressing regret at inability to attend the meeting; Mrs. W. H. Curtis, Meringo, Illinois, widow of our departed friend and fellow-member, thanking the I. S. V. M. A. for sympathy expressed in her recent hour of trial, culminating in the death of an honored member, a loving husband, and a kind and indulgent father.

Dr. E. L. Quitman, President of the Chicago Veterinary Society, now announced the hour of the banquet as 7.30 P. M., and again invited all members of the I. S. V. M. A. and visiting veterinarians to partake of a banquet tendered by the Chicago Veterinary Society. On motion, meeting adjourned to meet at 10 o'clock A. M., Dec. 5th.

At 7.30 all gathered at the dining room of the Victoria Hotel, where a most elaborate banquet was spread, accompanied by music from a special orchestra. Dr. E. L. Quitman, after a few brief remarks, appointed Prof. Joseph Hughes as toastmaster, who, after a very pleasant speech of acceptance, called upon the various ones present, who responded in turn.

Dr. W. H. Welch, President of the I. S. V. M. A., was called, who in a very able way addressed those present, setting forth the fact that the very excellent repast and entertainment was but one more evidence of the high esteem and good fellowship in which the Chicago Veterinary Society held the State Association, and that they on every occasion from the first had proven themselves our friend.

Next Dr. J. M. Parks, of Chicago, was called upon, who rendered a vocal selection, which proved that there was one at least among our number who was the possessor of an excellent tenor voice. Dr. Parks was heartily applauded and during the evening responded to the call of the toastmaster a number of times.

Dr. George McKillip, son of Prof. M. H. McKillip, President of the college which bears his name, was next called upon and delivered a very pleasant talk, which was applauded.

Prof. R. C. Moore, President of the Kansas City Veterinary College, was called next, and in a pleasant and entertaining

way reviewed the history of the veterinary profession in Chicago from twenty years ago to the present time, bringing out many pleasant features of interest to all present.

Mr. W. H. Collins, whose ability as a most excellent entertainer was well known to some of the members of the Chicago Veterinary Society, was present by invitation to assist in the entertainment. Mr. Collins on a number of occasions responded to the call of the toastmaster and requests of the guests and always dispensed a goodly amount of wit, which elicited peal upon peal of uproarious laughter. Mr. Collins proved himself to be a king of public entertainers.

Dr. B. T. Woodward, Recording Secretary of the Pennsylvania Veterinary Medical Association, made a very pleasant talk, setting forth the good will that exists between the associations of this and other states, and advocated vigorous alumnæ work.

A harp solo rendered by a member of the orchestra was most highly appreciated by all present.

Prof. A. H. Baker now responded to the call of the toastmaster, and in his usual pleasant and earnest way set forth the past and present status of the veterinary profession, and in closing predicted a bright and glorious future.

Dr. W. B. Lewin, Russell, Ill., now responded as the oldest practicing veterinarian present. Dr. Lewin voiced the feeling of all present by saying that he was glad to be here, and in a pleasant way, characteristic of himself, made a very interesting talk in behalf of the profession.

Dr. John Scott, Peoria, a member of the State Board of Veterinary Examiners, set forth some of the doings of the Board.

Drs. E. L. Quitman, L. C. Tiffany, J. J. Millar, L. A. Merillat, S. S. Baker, and many others responded to the call of the toastmaster. The entire evening was one of pleasure and one that will always be looked upon by the members of the I. S. V. M. A. with pleasure in the highest.

At a late hour "good night" was said, and each promised the other to meet at the second day's session of the I. S. V. M. A. at 10 o'clock A. M.

Dec. 5, 1906, meeting called to order at 10 o'clock A. M. by President Welch.

Reading of papers was resumed. Dr. W. G. Hassell, Grayville, presented a paper entitled "Ridgling Castration; Preparing Patient for Operation and After-Care."* This paper showed

* Published elsewhere in this number of the REVIEW.

careful preparation, and was vigorously discussed by Drs. Mills, Stringer, Glendenning, Martin, Presler, Jones and Weese.

Dr. L. C. Tiffany, of Springfield, "The Effects Sometimes Produced by Feeding Unsound, Immature and Mouldy Corn to Equines." This paper was well written and showed that its author had made a careful study of the subject, which was well presented and was most ably defended through a very animated discussion, in which the following participated: Drs. Lewin, Presler, Nesbitt, W. J. Martin, W. G. Hassell, George B. Jones, R. F. Hoadley, N. P. Whitmore, Glendenning, Galbraith and Weathers. The discussion brought forth a diversity of opinion as to the exact effects produced by these mouldy, immature, unsound foods.

The noon hour being at hand, meeting adjourned for lunch, to reconvene at 1.30 P. M.

At 1.30 P. M. meeting was called to order by the President, and the reading of papers resumed.

Dr. J. T. Nattress, "Report of Cases." This paper was very interesting and was discussed by Drs. Presler, Jones and S. S. Baker.

Dr. M. M. Fletcher, "Abdominal Dropsy in a Cow." Dr. Fletcher presented this unusual condition in a way that showed a familiarity with the subject, and a liberal discussion followed by Drs. Nattress, Glendenning, Mills and Martin.

The President now appointed the following as an auditing committee: Drs. J. H. Crawford and N. P. Whitmore.

Dr. L. C. Tiffany offered the following resolutions:

"*Resolved*, That in the opinion of the I. S. V. M. A. the word 'veterinary' is an adjective, and should not be used to designate a practitioner of veterinary medicine and surgery, and that the term 'veterinarian,' being a noun, should be used for such designation."

Dr. E. L. Quitman moved the adoption of resolutions, and added that a copy be furnished the Associated Press of Chicago. On vote, the resolutions were adopted.

Deciding place for the semi-annual meeting was now considered. Dr. W. J. Martin nominated Springfield. There being no further nominations, a vote was taken by acclimation. Carried.

The following bills were read and ordered paid: Secretary, $44.25; Treasurer, $2; Victoria Hotel, for meeting room for two days, $10.

The Auditing Committee having completed its work, re-

ported the accounts of the Treasurer and Secretary as correct, and, on motion, the report was accepted and committee discharged.

The following names applying for membership were read and upon ballot were declared elected: Drs. J. T. Stoner and M. E. Gleason.

A motion was now brought before the house, thanking the Chicago Veterinary Society for the kind and courteous treatment extended to the members of the I. S. V. M. A. and visiting veterinarians, which was unanimously carried.

Election of officers for the ensuing year resulted in the election of the following:

President—F. H. Barr, Pana.

Vice-President—C. C. Mills, Decatur.

Secretary—N. I. Stringer, Paxton.

Treasurer—R. G. Walker, Chicago.

Board of Censors—George B. Jones, Sidell; J. H. Crawford, Harvard, and C. S. Hayward, Mattoon.

The Secretary was instructed to procure a suitable case for the Charter. The Secretary was also empowered to purchase a suitable case or satchel to carry all papers and everything pertaining to the office of Secretary. The Treasurer was authorized to purchase a suitable case for carrying everything pertaining to his office.

The Secretary-elect was instructed to notify all members who are $5 or more in arrears to pay up by the July meeting, 1907.

Dr. Joseph Hughes presented an amendment to Article IV, Section 4, of the By-Laws to read as follows: "We hereby give notice that at next meeting we shall move to add to Article IV of the By-Laws an additional section as follows: Members whose names have been dropped from the roll of the Association on account of non-payment of dues can be reinstated on their application being acted upon by the Board of Censors and Association, and then paying the regular membership fee. Signed, Joseph Hughes and J. T. Nattress."

The subject of a Press Committee was brought up, and after discussion the President was empowered to appoint three members, whose duty it shall be to see that the Association proceedings are brought properly before the press.

Adjourned to meet in Springfield in July, 1907, the date to be made known later by the President.

F. H. BARR, D.V.S., *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

When the January meeting was called to order at 8.30 P. M. on the 2d, in the lecture room of the New York American Veterinary College, the room was filled with members and visiting veterinarians, who had been attracted by the splendid program announced in the invitations sent out by the Secretary.

President Roscoe R. Bell occupied the chair, and Dr. W. Reid Blair was at the Secretary's desk. The roll-call was dispensed with, and the minutes were read and approved.

The President at once introduced Dr. W. L. Williams, of the New York State Veterinary College, Ithaca, N. Y., who presented a most carefully prepared and illustrated paper on "The So-called Upward Luxation of the Patella of the Horse (The Hooking of the Internal Patellar Ligament over the Internal Condyle of the Femur)." The essayist had arranged a series of well-executed drawings made from subjects in the college clinic in full view of the audience, and in reading his paper he had to constantly refer to the drawings to make clearer the arguments of his paper. While the REVIEW will publish this paper in full in the March number, together with reduced copies of all the drawings, the reader will necessarily lose the benefit of the running remarks made by Dr. Williams while referring to the relations borne by his article to the illustrations. When the Doctor gave evidence and expressed his firm conviction that in most, if not all, of the cases of so-called luxation of the patella, so common in horses which stand idle, especially among "green" horses and those that have suffered from influenza, strangles, etc., as well as in robust young horses, there is no dislocation at all, that the patella remains in its normal position, he was attacking an accepted theory that had been well-seated in the veterinary mind for many years, and, while we believe that every one of his auditors considered that he had made out a true case, it was hard to ask them to throw away the teachings of a century or more, and acknowledge that what they had so often treated and explained to their clients, was wholly wrong; that the manipulations which they had practiced to return the patella into its proper groove, were worse than useless, and the surgical division of ligaments which had been described and performed by many were worthless interferences. It was more than one could expect, that this large body of active practitioners would be prepared to accept *in toto* the conclusions of

one who had closely studied the subject and had proven his case to his own satisfaction. But, as said, Dr. Williams made a deep impression upon his audience, and in the discussion many were prepared to endorse his view even on such short notice. The weakest point in the paper was that no acceptable theory was put forward to take the place of the one which he so ruthlessly destroyed. True, he removed the lesion from the crural group of muscles, and placed it among those attached to the ischium, principally in the long vastus, but he has as much of an explanation of "cramp" here as in those on the anterior face of the femur. But if he did not explain thoroughly just what the causative factor is, he surely proved that it is unreasonable to believe that the internal patellar ligament is hooked over the condyle of the femur. He reasoned that if such was the case, the horse would be lame after the luxation was reduced, and that, in view of the harsh treatment to which such patients are often subjected, that ligament would sometimes be ruptured; that the accident usually occurs while the horse is standing perfectly still, and never while lying down, or jumping, or doing any other act which would apparently predispose toward it. But, then, it will be much better to read the full text of Dr. Williams' paper in the March REVIEW.

Discussion was liberal, and quite diverse in opinion, many of those taking part relating some peculiar experiences. None, however, could recall a case which failed to recover, save a few which sustained fatal injuries while struggling in the efforts to overcome the condition. Among those taking part were Drs. Berns, Grange, Ackerman, Grenside, Bowers, Weaver (of Glen Cove), and others.

Dr. F. C. Grenside, of New York, then presented a most scholarly paper on the subject of "Quality in Horses," which was a gem of thought along a line that has perplexed veterinarians and intelligent horsemen for a long time, and which is a most uncertain condition in horse show and sale catalogues, and in the discussion of the merits of horses. Dr. Grenside offered a standard by which "quality" may be judged, and all felt that his contribution was of inestimable value to a subject that has ever been paradoxical. Fortunately, the REVIEW secured a copy of this paper, and our readers will have the pleasure of reading it in another section of this number. Discussion was disarmed, but many present expressed their appreciation of the paper, and a few contributed some thoughts to the subject.

Dr. Sherwood, who was to have offered a case report on

"Tuberculosis in a Dog," sent a letter expressing regret that he could not be prepared for this meeting, but would be on hand at the February session.

The little dog with peculiar lesions of the iris, which Dr. Gill had offered to bring before the meeting, had gone out of the city for the holidays, but will surely be at the February meeting.

A letter which the President had received from Dr. B. T. Woodward, of Chicago, in reference to the proposed establishment of a veterinary department at the University of Illinois, was read to the meeting. This letter will be found elsewhere in this number.

Dr. Elisha Hanshew, of Brooklyn, was elected a member of the Association.

Dr. Mangan brought up the subject of changing the name of the Association to one more comprehensive of its scope. He pointed out that, while its name indicated that its membership and activity were confined to the County of New York, we have members residing on Long Island as far away as Bay Shore, Far Rockaway, and other points. He also thought that our By-laws were greatly in need of revision, since the supply is exhausted and those that are in existence bear but little relation to those under which we are governed, so numerous have been the amendments.

At the February meeting a committee will be appointed to take up this and put it properly before the Association for action, without consuming too much time.

The Secretary announced the committees which had been appointed, but omitted that upon the Judiciary, which is as follows: George H. Berns, chairman; Dr. Patrick Burns, and Dr. W. Reid Blair.

For the February meeting, occurring on the 6th, Dr. Leonard Pearson, of Philadelphia, will present a subject of interest, probably "Milk Hygiene," or "Dairy Inspection;" Dr. A. Silkman, of the New York Board of Health, "Glanders in Man as Viewed by a Veterinarian;" Dr. D. J. Mangan, "The Agglutination Test for Glanders;" Dr. Thomas G. Sherwood, "Tuberculosis in a Dog;" Dr. H. D. Gill, demonstration of a peculiar lesion of the iris in a dog.

Visitors are welcome at all meetings, and the affiliation of all veterinarians in good standing is solicited to strengthen the good work which the Association is endeavoring to accomplish.

(R. R. B.)

ONTARIO VETERINARY ASSOCIATION.

The Greeks had their oracles; the Romans their augurs; we all have our omens—and the small attendance at the opening of the meeting certainly looked rather inauspicious. However, oracles, augurs and omens cannot always be relied on, as in a very short time members from far and near began to arrive rapidly.

There was soon a good attendance, and a most interesting and instructive meeting was the result; of which the following is a very condensed report.

The annual meeting of this Association was held in the Ontario Veterinary College, Toronto, on Friday, December 21, 1906. Members were present from all parts of the Province and some from the United States.

The President, Dr. L. A. Willson, V. S., of Aurora, opened the meeting with a short address that was received with applause.

The minutes of the previous meeting were read and approved.

The Secretary's, Treasurer's, Registrar's and Auditors' reports were received and adopted, showing that there was now in the Treasurer's hands the sum of $34.31.

The following new members were proposed and accepted: S. E. Watson, V. S., Niagara Falls, Ont.; A. L. Torrie, V. S., Thamesford, Ont.; D. Henderson, V. S., Glencoe, Ont.; B. Freel, V. S., Woodville, Ont.; G. McCluskey, V. S., Alliston, Ont.; D. C. Tennent, V. S., London, Ont.; A. M. Lloyd, V. S., Bolton, Ont.; J. McFadyean, V. S., Arthur, Ont.; E. A. A. Grange, V. S., New York City, U. S.

At the close of the nominations an animated discussion ensued as to who were, and who were not eligible for membership in this Association; and it was ultimately resolved "that a committee, composed of the President, Vice-President, and Dr. J. D. O'Neil be appointed to investigate and report."

Dr. Rutherford, Veterinary Director-General for the Dominion of Canada, reported that he has now in his hands as Treasurer of the Veterinary Organization Committee, the sum of $656.63.

Dr. C. Elliott gave a verbal report of the proceedings of the Veterinary Organization Committee; also Dr. Rutherford and Dr. Andrew Smith spoke relative to the action of the committee and its results, and a motion was subsequently brought forward by Dr. C. Elliott, seconded by Dr. J. D. O'Neil, and

passed, "that the thanks of the members be tendered to Dr. Rutherford for the stand he has taken in endeavoring to elevate the profession in the Dominion."

On the invitation of Dr. Andrew Smith, the meeting adjourned for luncheon.

After luncheon a case of paralysis of the retractor muscle of the penis of the horse was exhibited in the College Infirmary. The penis was hanging down from the sheath and considerably swollen. The operation of its excision was very skilfully performed by Dr. W. J. R. Fowler, Demonstrator of Anatomy of the Ontario Veterinary College, assisted by Mr. C. G. Saunders, veterinary student, who administered chloroform, and who has had considerable experience in producing anæsthesia with chloroform. This operation was viewed with much interest The animal is now doing well.

On the reopening of the meeting Dr. E. A. A. Grange, of New York, who graduated from the Ontario Veterinary College about 30 years ago, read a very interesting paper on "Motor Stimulants" that are sometimes given to race horses with the object of improving their racing powers (called by racing men "doping"). He described the action of the drugs commonly used, and the symptoms and conditions they produce. He also gave various modes for detecting their administration.

Dr. Rutherford gave an interesting and instructive address, mentioning surra and dourine, or maladie du coit. The similarities in the symptoms of these diseases in the Eastern and Western Hemispheres, but the marked bacteriological differences that are found in Manitoba and the adjacent provinces from those in tropical climates and in the Eastern Hemisphere. He also mentioned that Dr. A. E. Watson, of Lethbridge, Alta, Quarantine Station, had reported to himself in a letter dated Dec. 3, 1906, the finding of trypanosomata in the blood of the cotton-tail rabbit *(Lepus sylvesticus)* of that district. This is the first record of the finding of trypanosomata in mammalian blood in Canada.

Dr. Duncombe, V. S., read a good paper on "Castration." He gave an excellent description of his method of operating in the standing position, and advocated the application of carbolic acid or creolin, in oil, to the scrotum afterwards.

All these papers elicited useful discussions, in which many participated. And the thanks of the meeting were unanimously voted to all the gentlemen who had added so much to the interest and instruction of the meeting.

The subject of the so-called "Veterinary Correspondence Schools" was then brought forward, and institutions of that character were very strongly reprobated by many members of the profession.

A motion was passed that the sum of $25 be appropriated for a medal to be presented for competition to the graduating class of the Ontario Veterinary College at the approaching spring examinations.

A motion was passed that the thanks of the Association be tendered to Dr. L. A. Willson, V. S., the retiring President, for his earnest efforts while in office for the best interests of the Association and the profession at large.

It was also moved by Dr. Rutherford, seconded by Dr. O'Neil, and carried, that the officers of the Association be empowered to hold a meeting of the Association during the coming summer, and Dr. Rutherford spoke favorably of the meeting being held in the City of Ottawa.

The following gentlemen volunteered to read papers at the next meeting: Dr. Bowlby, V. S., Tweed, Ont., and Dr. Porter, V. S., of Brantford, Ont.

The following is the result of the election of officers for the ensuing year:

President—J. W. Orr, V. S., Stratford, Ont.

First Vice-President—O. H. Duncombe, V. S., Waterford, Ont.

Second Vice-President—F. G. Hunter, V. S., Welland, Ont.

Secretary-Treasurer and Registrar—C. Heath Sweetapple, Toronto.

Assistant Secretary—R. Barnes, London.

Directors—Drs. C. Brind, G. T. Bowlby, J. W. Porter, C. E. Elliott, W. Steele, J. A. Tancock, T. Baker, Jas. Stewart.

Auditors—Drs. C. Elliott and J. H. Reed.

Delegate to the Industrial Exhibition, Toronto—Andrew Smith, F. R. C. V. S.

Delegates to the Western Fair, London—Drs. J. D. O'Neil and W. J. Wilson. C. HEATH SWEETAPPLE, *Secretary.*

COLORADO STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting took place in Denver, on Jan. 2, with a fair number of the members in attendance, convening at the Gentlemen's Riding and Driving Club. No clinic was held in

connection with this meeting. Officers were elected as follows:

President—Dr. G. H. Glover, Fort Collins.

Vice-President—Dr. E. J. Foreman, Trinidad.

Secretary-Treasurer—Dr. M. J. Woodliffe, Denver.

Board of Directors—Drs. M. J. Dunleavy, Charles G. Lamb, Mark White, and Solomon Bock.

It was decided not to make any effort at the coming session of the Legislature to amend the state veterinary law, but to enforce the law now upon the statute book, and make arrests and prosecute men who are practicing without licenses.

A paper was read by Dr. Mark White on "Tuberculosis of Cattle and Its Relation to Public Health," pointing out the bad state of affairs in Colorado and the steps that must be taken to protect the people who are using milk. He showed that municipal inspectors do not meet the need in this respect, as they give no heed to the possible presence of tuberculous germs, their work being confined to the amount of butter fat in the milk or the presence of an undue amount of water. State Veterinarian Chas. G. Lamb told of an incident where a man, a victim of tuberculosis, had appealed to him on behalf of the children of Colorado who have inherited a tubercular tendency from their parents and whose health is threatened by impure milk. The Association recommended supervision of the milk supply by state authorities, either through the creation of the office of state inspector or through the State Board of Health or Live Stock Commission. The members declared that such supervision was absolutely necessary for the protection of the life and health of the rising generation in the state.

The question of hog cholera and its suppression was also taken up, and the advisability of calling on the Government for aid in the matter was discussed at considerable length.

Dr. A. P. Drew, Grand Junction, reported several swine of all ages dying from a disease similar to gangrene. State Veterinarian Lamb has been called upon to investigate.

M. J. WOODLIFFE, *Secretary.*

KENTUCKY STATE VETERINARY MEDICAL ASSOCIATION.

On Nov. 21–22, 1906, this Association held its first annual meeting in the Court House, Lexington, Ky., the first day being devoted to papers and discussions, and the second devoted to clinic.

Dr. F. T. Eisenman, of Louisville, President of the Association, presided; the attendance was small.

Dr. W. E. A. Wyman, of Covington, read a paper on "Are the Power Floats in Their Present State Practical?"

Dr. M. M. Leach, of Lexington, read on "Bleeding and Purgatives in Veterinary Practice."

These papers were well discussed. The evening session was devoted to discussions of tuberculosis, veterinary legislation and practical experiences in veterinary practice; adjourning to meet at Dr. D. A. Piatt's veterinary hospital, 755 South Broadway, Nov. 22, at 9 A.M., where a clinic, consisting of diseased molar, castration, periodic ophthalma, quittor, fistula of withers, etc. (about ten cases in all), were dealt with as was considered best.

While the attendance was not as good as it might have been, the meeting was a very profitable and enjoyable one, adjourning to meet on the third Tuesday in November (19th), 1907, the place to be selected later. D. A. PIATT, *Secretary.*

OKLAHOMA VETERINARY MEDICAL ASSOCIATION.

The members of the veterinary profession of Oklahoma and Indian Territory met at Oklahoma City, Nov. 3, 1906, and organized a permanent association under the name of the Oklahoma Veterinary Medical Association, and elected the following officers for 1907:

President—Dr. L. D. Browne, Guthrie, Oklahoma.

Vice-President—Dr. L. J. Allen, Oklahoma City.

Secretary-Treasurer—Walter H. Martin, El Reno, Okla.

The next regular meeting will be held at Guthrie some time in March, 1907, the exact date to be announced later.

WALTER HYDE MARTIN, *Secretary.*

MISSOURI VALLEY VETERINARY ASSOCIATION.

The semi-annual meeting of this Association will be held in Kansas City at the Kansas City Veterinary College, February 18th and 19th, 1907. A full program of interesting papers will be presented for discussion. An interesting clinic will also be provided for. This Association has a membership extending into all the states in the Missouri Valley, and the Secretary takes this opportunity of inviting all veterinarians in the Middle West to attend this meeting. B. F. KAUPP, *Secretary.*

NEWS AND ITEMS.

DR. JAMES BRASHEAR, Mount Sterling, Ky., died July 23.

CHARLES STEWART, U. P. '04, is connected with the B. A. I. at Chicago.

DR. RALPH C. JENKS, A. V. C., '97, Ossining, N. Y., was married Jan. 16 to Miss Charlotte Orser, of the same place.

S. H. SAUL, D. V. S., Montgomery, Ala., has installed one of the Bradwood Manufacturing Company's humane operating tables, and reports that he is using it with great satisfaction.

SECRETARY GRIBBLE, of the Ohio State Veterinary Medical Association, sent out a very tastefully arranged and nicely printed program for the annual meeting, which occurred at Columbus on the 22d ult.

"FIVE THOUSAND HORSES AND MULES were burned in a big livery stable at Atlanta, Ga."—(*Farmer's Advocate, Manitoba.*) This must have been a *very* large stable, spreading over most of the Georgian municipality.

NEW JERSEY STATE EXAMINATIONS.—The January examinations of the New Jersey State Board of Veterinary Medical Examiners were held January 25 and 26, 1907, at the Capitol Building at Trenton, as prescribed by law.

IN writing to Dr. Charles H. Jewell in relation to the latter's article in the September REVIEW upon the Veterinary Service of the U. S. Army, Dr. Goldbeck, a veterinarian of the German Army, stated that he was preparing a book on the subject of the military veterinary service of the various countries.

BOVINES POISONED BY PAINT.—A dispatch from Sag Harbor, L. I., to the Brooklyn *Eagle*, dated January 9, says: "A herd of Jersey cattle owned by Henry Hainey, of Sagaponack, broke out of the cow-yard yesterday and drank from a tub of paint left exposed by painters who were painting the farmer's barn. Two of the cattle were found dead and others were only saved by hard work by a veterinarian."

AN UNAPPRECIATIVE BUCK.—*Meriden, Conn., Dec. 29.*—M. L. Carpenter, a veterinary surgeon, was painfully wounded at East Hampton yesterday by a blind buck. The deer, which had been shot in the face, was caught in the woods and taken to a stable, where Carpenter, in the rôle of the good Samaritan, began treating it to restore the sight of one of its eyes. It was docile at first, but yesterday it suddenly attacked Carpenter in its stall, savagely kicking and trampling upon him. Stablemen finally got him away from the flying hoofs. He was very

badly bruised and shaken up.—(*New York Herald, Dec. 30.*)

MOLASSES FOR HORSES.—Dr. D. S. DeWolf, Hart, Mich., writes: "I have been a subscriber to the REVIEW for a number of years, and have become interested in molasses as a food for horses, which is often spoken of in its pages, but the quality is never mentioned. Can you give me any information regarding this—not simply the best, but would so-called 'black strap' molasses do?" *Answer.*—Any molasses containing a large percentage of glucose will suffice, and, of course, the purer the better. In the majority of the experiments mentioned in this journal the by-products of sugar manufactories were employed. A ready-prepared food rich in saccharine constituents, guaranteed to be good New Orleans molasses, is advertised in the REVIEW under the name of "Atlas Food," the manufacturers of which state that there is one quart of such molasses to every four quarts of "feed," and the results from the feeding of which are excellent.

NEBRASKA VETERINARY LAW HELD VOID.—The law enacted by the last legislature to regulate veterinary surgeons is unconstitutional, according to a decision rendered by County Judge Leslie yesterday afternoon in the case of the state against Dr. D. D. Turner. The case was filed by Dr. Ramacciotti as a test of the law. The decision will be of interest because several other prosecutions hinged on the outcome of this case. It is said it may be carried to the supreme court for a final test. The law which is declared bad provides that no person engaged in the practice of veterinary surgery shall assume the title veterinary surgeon, or any analogous title or any degree conferred by a recognized college of veterinary surgery unless he has first secured a license from the state board. The law did not prohibit unlicensed surgeons from practicing, but merely prevented them from holding themselves out as such or from using any title or degree in connection with their profession. Judge Leslie held that this was not a proper application of police power of the state and was an improper abridgement of the personal liberty of citizens. He pointed out that the law made it a crime for a person who was unlicensed to tell another person that he had received a degree of veterinary surgeon from a college, even though it was true. A. W. Jefferis, who attacked the validity of the law, also contended it was against public policy and intended to protect titles. Dr. Turner has practiced in Omaha sixteen years. He was a student at Oxford, a graduate of the Edinburgh Veterinary College, and a graduate in

organic and inorganic chemistry in a London school. Because he was not registered the law prohibited him from hanging his diploma on the wall of his office or even telling anyone he had a degree or was a veterinary surgeon. His specific offense was in sending out a bill with the words "Dr. Turner, graduate veterinarian," on it. He was arrested for using the title after his name. Judge Leslie said he thought a law that provided no veterinarian should practice without registering would be sound, but he did not think the legislature had the right to deprive a person of the right to use a title or degree that had been conferred upon him.—*(Iowa-Nebraska Veterinary Bulletin for January.)*

THE VETERINARIAN AND THE MUSIC MASTER.—Two gentlemen entered the smoking car of a railroad train in Central Pennsylvania not long since. There being but one vacant seat they were obliged to divide it between them. One of the gentlemen was a veterinary surgeon, the other a teacher of singing. One of the most characteristic things about a man of the world is his reticence in the presence of strangers—especially so, concerning his own affairs. These two men, in addition to the conventional caution of their kind, were also each a little sensitive as to his profession. It is not quite explicable, yet we sometimes see a full grown man trailing about with a music roll under his wing and not at all shy. There are others, however, who are. These men usually carry their music in a valise, which, while it looks professional, does not advertise a specialty. It is not that they are ashamed of their work; they probably dislike to be classed with the fellows who advertise their business with the music roll. The veterinarian, meanwhile, though not at all above his work, feared the mental estimate and comparison of a stranger as between the professional care of sick animals and sick men. So the appearance of his valise was quite as innocent of indication as to its contents as was the musician's. The conversation opened by an exchange of comment on the weather; from that to business prospects, the political activities next, and by that time each began to wonder who the other was or more particularly what his business was. Naturally, the bolder of the two, who, in this instance, was the veterinarian, took the leap. "By the way, what did you say your business is?" "I did not say," replied the musician, "but I don't mind telling you; I am a repairer and builder of harps." His companion's face was a study. "Humph," he grunted, and then added: "Well, that is some-

thing out of my line. I didn't suppose there was much doing in the harp line these days." "O yes, quite something," was the reply. "Yes, I can take new harps and tune them up, put in the strings and fix the pegs and polish them off and get them ready for the market." "Is there any money in it?" asked the veterinarian. "Yes," said the harp man. "Some of them bring a great price, and some of them are worthless." "I suppose harps, like violins, improve with age; is it not so?" "Well, not exactly," was the reply. "You see, old harps have been played on so long that they become tinny and thin, and then some other fellow who doesn't know the business has probably had a hand in making or repairing them; we find it a difficult matter to get any tone into them." "Well! I suppose you do not tell your customers that you can't fix them up and spoil your own business, do you?" asked the veterinarian. "Not always," sighed the harp specialist. "Is there any money in it?" "No, not any great amount. I only get paid by the hour." "What do you call your time worth?" "I usually get about $12 an hour from my customers." "Whew!" whistled the veterinarian. "$12 an hour!" "Yes, but you know there isn't much in it, for there are only so many working hours a day, and it costs a great deal to advertise." The veterinary surgeon sat still and looked puzzled. He couldn't quite swallow the stories of his companion, and still was too much of a gentleman to say so. Just here came *his* turn to submit to an examination. "You haven't told me what your business is yet?" "No, but I will. I am in various lines of activity. I am a plasterer and have something to do with leather; do quite something in oils, powders and hides, and have a good deal to do in ivory filing." "You certainly have a variety of interests," said the singing master. "It must require a large plant to carry on such a business." "It doesn't require so much of a plant as it does nerve to describe it," the veterinarian said rising to his feet, for just at that moment the train reached his station. Strange to relate, the men smilingly exchanged cards as they parted. The veterinarian said to his wife when he arrived home: "I guess we will send Mabel to Prof. Blank for her singing lessons. I met him on the train to-day and he seems a decent sort of chap. I would like to help him along." The teacher remarked to his wife: "If I ever save money enough to buy a horse and he ever gets sick, I shall certainly patronize Dr. ———. I met him on the train to-day, and he seems a very capable man."—(*The Etude, Feb., 1906.*)

VETERINARY MEDICAL ASSOCIATION MEETINGS.

Secretaries are requested to see that their organizations are properly included in the following list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 10-13, '07.	Kan. City, Mo.	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	July, 1907.	Asbury Park.	W. H Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tu. Feb., '07	Hartford.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y...	Sept., 1907.	New York City	G. T. Stone, Binghamton.
Schuylkill Valley V. M. A.	June 19, 1907.	Reading, Pa.	W. G. Huyett, Wernersville.
Passaic Co V. M. Ass'n.....	Monthly.	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n...	Call Exec. Com.	.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet Med. Ass'n.....	.....	....	R. E. Freeman, Dexter.
Central Canada V. Ass'n.....	Feb. 6–7.	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n...	Feb., 1907.	Lansing.	Judson Black, Richmond.
Alumni Ass'n N. Y.-A. V. C..	April, 1907.	141 W. 54th St	T. F. Krey, N Y. City.
Illinois State V M. Ass'n.....	July, 1907.	Springfield.	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	Feb., 1907.	Madison.	S Beattie, Madison.
Illinois V. M. and Surg. A....	.....	Decatur.	C. M. Walton. Rantoul.
Vet. Ass'n of Manitoba.....	Not Stated.	Winnipeg.	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n...	.....	.....	C. J. Fleming, Winston Salem
Ontario Vet. Ass'n.....	Summer 1907.	Ottawa.	C H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	Feb. 6, 1907.	141 W. 54th St	W. R. Blair. 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....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n...	.....	Rochester.	J. H. Taylor, Henrietta, N.Y.
Iowa Veterinary Ass'n.....	.....	..... .	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n	.....	.....	C. A. Mack, Stillwater.
Pennsylvania State V. M. A...	March 5-6, '07	Philadelphia.	C. J. Marshall, Philadelphia
Keystone V. M. Ass'n.....	Monthly.	Philadelphia.	A. W. Ormeston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n...	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n	Feb. 18-19. '07	Kan. City, Mo.	B. F. Kaupp, Kansas City
Rhode Island V. M. Ass'n....	June and Dec.	Providence.	T. E. Robinson, Westerly, R. I
North Dakota V. M. Ass'n....	.....	.....	J A. Winsloe, Cooperstown.
California State V. M. Ass'n...	Mch. Je. Sep, Dc	San Francisco	C. H. Blemer, San Francisco.
Southern Auxiliary of California State V. M. Ass'n....	Jan. Apl. Jy, Oct.	Los Angeles.	J. A. Edmons, Los Angeles.
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M Ass'n.....	.....	.....	Hans Jenson, Weeping Water
Kansas State V. M. Ass'n....	Jan. 1908.	Manhattan.	Hugh S. Maxwell, Salina.
Ass'n Médécale Veternaire Francaise "Laval,".....	1st & 3d Thur. of each month.	Lect. R'm Laval Un'y Mon.	J. P. A. Houde, Montreal.
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, Rigand, P.Q.
Kentucky V. M. Ass'n.....	Nov. 19, 1907.	Not decided.	D. A. Piatt, Lexington.
Washington State Col. V. M. A.	Monthly.	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association.	An'l Jan., '08	Indianapolis.	E. M. Bronson, Indianapolis.
Iowa-Nebraska V. M. Ass'n..	.....	.....	A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n..	....	.....	E P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	2d Thu ea. mo.	St. Paul, Min.	S. H Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A....	.....	Cincinnati.	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n..	.....	....	J C. Robert, Agricultural Col.
Georgia State V. M. A.....	July 4, 1907.	Atlanta.	L C. Willoughby. Experiment
Soc. Vet. Alumni Univ. Penn..	June, 1907.	Philadelphia.	B. T. Woodward, Chicago.
Virginia State V. M. Ass'n....	.....	.....	S. C. Neff. Staunton.
Oklahoma V. M. Ass'n.....	March, 1907.	Guthrie	W. H. Martin El Reno.

PUBLISHERS' DEPARTMENT.

Subscription price, $3 per annum, invariably in advance; foreign countries, $3.60; students while attending college, $2; single copies, 25 cents.

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—*From a Lover of the Horse,*
New York, Nov. 23, 1906.

ANAESTALGENE as a local anæsthetic, possesses many advantages over cocaine. Its effects are manifested much sooner and last much longer, and it is free from toxicity. It is very satisfactory in operations upon dogs for these several reasons.

AMERICAN VETERINARY REVIEW.

MARCH, 1907.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, January 15, 1907.

VACCINATION AGAINST STRANGLES.—Of all diseases which attack horses in their youth, none is more serious than strangles; if not by the mortality it gives rise to, by its many complications and sequelæ, which are so commonly observed, and it was to be expected that endeavors should be made to find means to protect horses from the disease and its complications by proper or prophylactic treatment; hence the application of serotherapy and sero-vaccination.

A few months ago, two French veterinarians (MM. Dassonville and De Vissocq) related a number of experiments which they had carried out in that direction, and which they resumed in the following conclusions:

(1) The immunization of horses against the virus of strangles can be realized.

(2) A serum against strangles, antigourmous, can be obtained, possessing an activity which seems manifest: *(a)* to the *curative* point of view, if care is taken to use it in sufficient dose and at the beginning of the infection (that is, during the period of incubation); (*b*) to the *preventive* point of view, in allowing the animal that has received it to resist, without serous troubles, the inoculation of a quantity of virus sufficiently

large to promote, if it has not been given, very important disorders.

(3) Consequently, sero-vaccination against strangles seems realizable.

It remains to realize it!

To another point of view, it seems to result from the observations of these authors: (1) That the infection of the streptococcus of strangles, in natural conditions, gives rise to thermic reactions, which precede by several days all external manifestations, and that the apparition of the classical symptoms occurs only when the disease is in full development. (2) To the practical point of view, the systematic recording of the temperature of horses, that have not yet had strangles, would permit the detection of the disease at its onset, an essential condition to reduce the severity of the symptoms and prevent its complications.

* * *

In several numbers of our esteemed contemporary, *La Semaine Vétérinaire*, the question is again brought forward by the same authors and resumed by saying:

Observation has proved that strangles, running its normal course, gives a relative immunity, which is sufficient in practice, allowing as it does the use of individuals in centres which are not exclusively centres of agglomeration of strangled animals, and that if there is a second attack, the disease will generally assume a mild form. Natural immunity is not absolute, but observation shows that it is practically sufficient and effective, made up of horses that have had the disease, and it seldom breaks out again among the horses. Therefore, in the struggle against the disease, it is not necessary to look in vain for an *absolute* immunization of the animals liable to take it, but to give them an immunity, as nearly as possible like that granted by a natural attack; and yet avoid the dangers that generally follow its development.

In their first communication, the authors had shown that a solid immunity could be granted to horses by the injections of

increasing doses of cultures of streptococci, and also that the dangers of those injections could be diminished by treating the vaccinated subjects with the serum of hyperimmunized horses.

With the permission of the Secretary of War, 104 horses were placed at the disposition of the authors for experimentation. Fifty-two of these received from the 2d to the 17th of August successive injections of serum—30, 40, 50 and 60 c.c. The other 52 remained as witnesses. Of the 52 serumized, 14 received no other treatment. They will, with their 14 witnesses, form the lot of experiment relating to the serumization. The other 38 were vaccinated. With their witnesses, they form the lot of experiment relating to sero-vaccination. Four cubic centimetres of culture were used. The vaccination was done on 23 horses, between 13 and 14 days after serumization, and in 15 horses from 6 to 7 days after the injection of serum. There was a slight rise of temperature after the injections, but it did not last. Two days after, it was normal.

* * *

The results obtained from those experiments were:

Of the horses that received the serumization only 28.57 per cent. took strangles; among the witnesses 78.57 per cent. took it also. Of the horses that were submitted to sero-vaccination, 29.72 per cent. took strangles, with a form which was never severe; 70.27 per cent. of the witnesses took the disease, and frequently with a severe form. Those results, both with serumization and sero-vaccination, are very satisfactory.

The results obtained by the sero-vaccination present a more precise character, because the experiment was made on a larger number of horses, and also because they were exposed to a more severe contamination.

The sero-vaccinated ones had acquired an immunity very near like that granted by the natural disease, and that is practically sufficient. Vaccination has never given rise to any accident, and other experiments, made on hundreds of horses, have proven it to be without danger.

In relation to the same subject, namely, the vaccination against strangles, I find in the *Revue Générale* an extract from the *Monatshefte fur praktische Thierheilkunde* of an article by Prof. Th. Kitt, of Munich. He had two colts, less than one year old; they never had nor were ever exposed to strangles. He injected through the veins 5 c.c. of very virulent culture, heated to 55° during 43 hours. No reaction. Three days after, a new injection of 5 c.c. of culture, heated 12 hours; then five times after during the seven following weeks, at various intervals, he injected doses of 10 c.c. of cultures, heated 10, 3, and 2 hours. Those injections were not followed by any disturbance or hyperthermia. After that, on three different, well-marked occasions, the two colts had opportunity to catch the disease, but remained healthy. Two months later, an attempt at experimental infection was made, consisting in the ingestion of a wineglassful of pus of strangles; this gave no results. A new attempt, made one month after, with fresh and very active pus from an abscess of the intermaxillary space, which was rubbed on the mucous membrane of the mouth and of the nose. A third trial, two months later, by immediate cohabitation with an animal in full suppuration and rubbing of pus on the nose and ingestion of the discharge from a parotid abscess. None of these experiments were followed by infection, the animals remaining refractory.

Similar experiments were made again on three other colts. One did not become refractory, but its treatment had not been as long as that of the others (3 injections of 10 c.c. in 13 days). The last injection had been followed with various manifestations. The subject submitted a few days after this last injection to cohabitation with an animal having strangles and having had pus applied on its mucous membranes, took a characteristic disease. The Professor thinks that immunization could have been obtained with this colt, as with the others, by the more practical method of the intravenous injections; it is evident that in the presence of the innocuity of those injections, a method of active immunization by this channel may be realized later.

STRABISMUS OF THE HORSE.—The records of strabismus are not very rare in veterinary medicine, but its study is not as complete as it is in human medicine. A very interesting communication relating to three special cases was made a short time ago at the Société Centrale, recording the observations made by three army veterinarians, MM. Clerget, Fayet and Nicolas. I will extract from it the description of the individual cases: (1) in making the ophthalmic examination of a four-year-old colt, just received in the regiment, the *abnormal situation of the papilla optici of the left eye* was noticed. Instead of being in the lower hemisphere of the eye, as in the normal condition, it seemed situated in the superior one, in such a manner that to see it it was necessary to look in the eye from below upwards instead of from upwards downwards. The fact might be due to a deviation in the axis of the eye downwards, or to an abnormality of position on the exit of the optic nerve. Comparative examination of the two ocular globes showed at once that the *left* was affected with *inferior strabismus*. Indeed, by taking the inferior palpebral border of the eye as bench-mark, it was found that on the *right*, it left uncovered between one and two millimetres of the sclerotic below the cornea, while on the *left* it covered four or five millimetres of the cornea. And, again, in raising the upper eyelids against the orbital border, one-half of a centimetre of the sclerotic could be exposed on the *right* eye, while on the *left* one centimetre was exposed. Consequently, there is inferior strabismus on the left side and the right is normal. The animal has also *deviation of the head.* It is held obliquely to the right in such a way that the tip of the nose is carried towards the side of the normal eye. This deviation is intermittent, very slight when the animal is eating, and looks towards the wall of his stall; it is principally marked when he looks out by the half door of his box-stall. The horse presents also a peculiar and interesting *asymmetry of the face.* By placing the head in its normal position, it is noticed that the left orbit, that of the strabic eye, is on a lower level than the right. It seems also as if the left side of the face was more incurved

than the right. However, there is nothing abnormal in the eye; the dimension and movements are normal.

* * *

(2) This horse is older than the first; he is eight years old. Arrived at his destination, he is placed in a box-stall, when at once his manner of carrying the head calls attention to him; its deviation to the right and the asymmetry of the face suggest the idea of inferior strabismus of the left eye, with papilla in the superior hemisphere, a suggestion which is confirmed by closer examination. The *strabismus is easily made out* with the bench-marks described in the first case, namely, inferior palpebral border and superior orbital arch, also the situation of the papilla in the superior hemisphere of the fundus of the eye. The *deviation of the head*, with the tip of the nose to the right, is very marked. The axial plane of the body passes the forehead about its middle, an indication that the entire neck is also twisted to the right. The deviation is also intermittent as in the first horse. While exercising it is less marked. The *asymmetry of the face* is accused by that of the orbits and also by that of *the ears*, the left being carried downwards. There is again double myopia, small floating bodies in both vitreous humors. The animal is very ugly, he strikes and bites, especially when approached from the left side.

Having died a few weeks after with a general infectious disease, an autopsy and examination was made, but gave no satisfactory results.

* * *

(3) The third case is that of a mare, in which the pupillar field of the right eye seemed to occupy the entire clear tapetum. Was it that the papilla was absent? No, but it is situated so low that with the normal dilatation of the pupil only a very small part of it can be seen.

A complete examination of the eye reveals: Superior strabismus of the right eye, with wide, almost circular, opening of the palpebral slit; inferior strabismus of the left eye, with marked dropping of the superior eyelid and retraction inwards

of the inferior eyelid; deviation of the head, with the tip of the nose turned to the right; asymmetry of position of the orbits, the left being the lower; and also of the ears, the left being again the lower.

* * *

In a few lines the conclusions of these interesting cases are:

(1) With eyes, objectively perfectly sound, in horses, three cardinal symptoms can be found associated, namely, *strabismus*, *asymmetry of the face*, and *deviation of the head.*

(2) The left inferior strabismus seems to impose the deviation of the head to the right.

(3) The unknown cause of strabismus must be looked for more in a congenital malformation of the bones of the head or of the muscles of the orbit than in a paralysis.

(4) The depreciation in value is more to the point of view of æsthetic than in that of execution of function.

* * *

AUTOMOBILE INJURIES TO DOGS.—One of the serious consequences of the creation of electric tramways and of the constantly greater circulation of automobiles has been a great increase in the number of accidents to people and to domestic animals. Indeed, in some localities, traveling has become so difficult and dangerous that it is almost an impossibility to pass in the streets where those vehicles are moving. Of all animals, dogs are the ones in which such accidents are most frequent, and this condition is apt to be the opening, for some practitioners, for a broad field of occupation, either as practitioners or again as experts to be called in a court of law to testify in suits for damages. In both cases, their knowledge and the value of their opinions can be considerably increased by individual experience as well as that of others.

This suggested to Prof. G. Hebrant to publish in the *Annales de Bruxelles* an article on "Injuries of Dogs by Automobiles."

The Professor has observed that these were always violent traumatisms, and that,no matter in what region they were found,

they were often accompanied by fractures, varying in severity and in location, but which would in many cases end in recovery, which is not surprising, taking into consideration the nature of the patient, its great resistance to septic and pyogenous infections and the habit that it has of entertaining a great condition of cleanliness by its system of licking its wounds, when it has a chance. But, besides this, there is another point upon which the Professor insists in relation to the cicatrization of open fractures. For many, those injuries are exceptionally severe and recover with difficulty and only after a long time, also only when the portion of bone that has been exposed and deprived of its periosteum has sloughed away. This is an error, or at least an exaggeration, as in many instances and after a time relatively short he has obtained complete recovery of open fractures, rather severe, without necrosis of bone or without a resection being necessary. The only essential condition to obtain this result is that the injured bone is kept in a complete aseptic state, protected from the contact of atmospheric air. Most thorough disinfection of the wound is the essential condition; it is not always necessary or advantageous to resort to the bistoury, the saw, or the bone nippers, but to allow the dead tissues to slough of themselves, and in that way greater surface of tissues will be preserved for the cicatrization of the trauma or the functional recuperation.

* * *

In closing his article Professor Hebrant gives the record of several cases of injuries inflicted by automobiles, and among them those of four open fractures, where he has obtained excellent results. (*a*) Open fracture of the right hind leg, where at first resection of the ends of the tibia and fibula was thought necessary. It was not done; wound dressed with simple bandage and closed in ten days, with consolidation of the fracture in a month. (*b*) Crushing and fracture of the left forearm. Here amputation had to be performed. Complete recovery in three weeks. (*c*) Crushing and fracture of the left hind leg; recovery; partial conservation of the claws. In this case, the

digits had been crushed, fractured; the metacarpal region also involved. Amputation was not resorted to. Wound was cleaned and aseptized, iodoform and boric acid dressing applied. Recovery in fifty days. (*d*) Fracture of the left forearm. Amputation at the elbow. Recovery in a month. The dog is still used for hunting.

The record of those interesting cases will increase the number of similar injuries which have found their way in other publications, but they will, besides, show younger practitioners that in many instances recovery is very likely to follow an injury which has the worst aspect, providing careful attention, proper treatment and wise patience are brought to bear towards the same end.

* * *

PURE CRYSTALLIZED BORIC ACID AN EXCELLENT ANTISEPTIC.—The antiseptic properties of boric acid are well known, but they are yet considered as very inferior to almost all the other agents of similar effects. At least, if we read Cadiot and Almy it is seen that for them boric acid, in concentrated solution (3 or 4 per cent.) does not possess (far from it) the antiseptic properties that Lister thought it had. About five times less active than phenic acid and a hundred times less than corrosive sublimate, it is only employed for the antisepsy of mucous membranes (eye, nasal and buccal cavities, ear, rectum, vagina, bladder).

Under the title of "New Treatment of Severe Sores or Wounds and in Particular of the Synovial, Articular or Tendinous Lesions with Crystallized Boric Acid," Mr. Busy, a French military veterinarian, publishes in the *Recueil de Medécine Vétérinaire* an article to the effect that, on the contrary, when used pure and in the crystallized condition, boric acid has antiseptic and anæsthetic properties, which class it at the head of all compounds of the same kind.

Mr. Busy says: "If one severe wound, such as the one made by the plunging of a broken shaft of a wagon into the muscles of the thigh, say 15 centimetres deep, is completely filled with

boric acid, the following is what is observed : The wound immediately after the first dressing throws out a certain quantity of serosity. This reaction always takes place, even on synovial structures. It seems as if the living tissues wanted to get rid of the foreign body, the pulverized acid. This secretion lasts but a short time. The acidification and saturation of the tissues of the wound take place and the inflammation is, so to speak, *jugulated.* There is a local anæsthesia produced, as there is no inflammatory œdema and therefore no pressure on the nerves. Of all the external or objective signs of inflammation, there only remain the granulating of the wound. If the saturation is kept up by additional application of acid, suppuration will not occur. The granulations may be rather pale, but their development remains the same. To resume, boric acid removes or prevents the apparition of the œdema, of the pain and of the suppuration, even without protecting dressing."

The author continues in illustrating his theory with a case of a large hæmatoma, in which he obtained a complete recovery in sixteen days. Then the case of an enormous abscess of the withers with very acute pain ; free opening, washing of the cavity, plugging it with boric acid, recovery in a few days. A case of fistula of the withers, another of a severe wound of the foot with disinsertion of the perforans, fracture of the semilunar crest complicated by synovitis and arthritis of the foot, have been followed by excellent results with the use of the acid in the crystallized form. Most severe injuries, broken knees, synovial wounds, arthritis and many others have been healed in the shortest length of time.

There is no doubt that if the facts reported by the author are not exaggerated, the application of this form of the acid is very important. Let us hope that further publications, more detailed, will allow the profession to judge.

* * *

RECORDS OF ABNORMALITIES.—As parallel to the communication of Dr. Harrison, made some time ago at one of the meetings of the A.V.M.A., I find in two of the numbers of the *Clinica*

Vétérinaria some notes of pathological anatomy observed at the abattoirs of Modena, which are of very great interest. They were recorded by Dr. Raffaele Pietro Rossi. I will mention only a few.

Two cases of double spleens, in pigs. In one, the two organs were atrophied and hanging attached to the great omentum, five centimetres apart; together they form a mass which in size and weight are about a quarter of those of a normal spleen. In the other, also attached to the omentum, one is normal in size and form and the other equally long but narrower, resting on the left portion of the stomach.

Two cases of *tumor in the cortical substance of the suprarenal capsules.* One, found in a steer, was as big as a small nut; the second was found in a cow.

In a pig a *portion of the peritoneum* was found *ossified.* It was in the left flank, at a point corresponding to the place where an incision for castration had been made. This neoformation weighed 195 grams.

Two cases of one *single kidney in calves.* Both animals were in very good condition. In one, aged three months, the left organ was absent and the right was of normal aspect.

By opposition, one case of *treble kidneys* was discovered in a horse. The animal was old, poor in flesh. The right and the left kidneys were in normal position, of good size and normal form. The third was between these, a little lower and under the vertebral column, oval in form, a little elongated and flattened, with a normal color.

In a steer affected with *tuberculosis*, lesions were found in the *cranium*, miliary caseous deposits being observed upon the right cerebral hemisphere.

Pulmonary melanosis was detected in a calf only 60 days old. If those deposits are not very rare in aged animals, it is certainly uncommon to see them in such a young individual.

In one sheep, fat, and in the best condition, there was *ectopia of the spleen.* Normal in form, size, color, and aspect, it was not in its normal situation. Instead of being situated on the

left side of the rumen, it was more on the right of the sublumbar region.

Finally, a *carcinoma of the vagina* was detected in a *cow*. On opening the uterus a tumor was observed at the neck. It was as big as an orange, opaque white in color, with a portion softened and ulcerated. The nature was made out by microscopical examination.

* * *

BIBLIOGRAPHY.—The bibliography of this month will be concise. I had so much of it in my last.

From the Bureau of Animal Industry, Bulletin No. 38, on "*Tuberculosis of the Food-Producing Animals*," by Dr. D. E. Salmon, a complete *résumé*, well prepared, for agriculturists, among which it ought to be distributed freely and which veterinarians would do well to consult. "*Order No. 137, Regulations Governing the Meat Inspection in the United States.*"

From Pretoria came the October, 1906, number of the *Transvaal Agricultural Journal*, full of good information on agricultural topics, with a veterinary section, containing articles from Dr. Arnold Theiler, C. E. Gray, M. R. C. V. S., and Thomas H. Dale, M. R. C. V. S.

From Canada, the report of the Veterinary Director-General, Dr. J. G. Rutherford, which contains valuable considerations upon the various contagious diseases in the Dominion, and also some well-illustrated cases of horses suffering with dourine. It contains very interesting statistics relating to the prevailing contagious outbreaks with which the veterinarians of Canada have had to deal. I read also the special report on glanders by Dr. Rutherford.

* * *

The most important work I have received is "*Surgical Diseases and Surgery of the Dog*," by Cecil French, Doctor of Veterinary Science (McGill University). It is a large volume of nearly 400 pages, with ninety-one illustrations, edited and published by the author in Washington, D. C. The contents are divided into 13 chapters. The first treats of General Surgery,

the following eleven of the diseases of regions, and the last of neoplasms. Among the illustrations many are original (photographs, I suppose), and some are reproductions from the French work of Cadiot and Breton, from which the author has borrowed much, giving due credit to those from whom he has quoted. At the end of each chapter and of each subdivision where the special diseases are considered, there is given a bibliography of the works which have been quoted by the author. This is an excellent work for reference, and it shows on the part of Dr. French a great deal of research and reading to make it up; French, German and English records are presented to the reader. The fifth, sixth, seventh, eighth and ninth chapters include all the affections of the abdomen, considered from a surgical point of view. They form what is probably the most important and interesting part of the work. It seems as if that part of the body in dogs was the one where surgical interference of great importance is most likely to be met with. Dr. French has had great experience in this specialty, I believe, and he could do justice to it. I think he has done it. His work will increase the literature on the subject and hold its place among works on general surgery and especially that of dogs, although I think his General Surgery is the weakest part of the publication.

New books on those subjects have been plentiful of late; let us have now one on general internal pathology up to date.

* * *

As a Christmas present, Prof. W. L. Williams has sent me the revised second edition of his excellent little work "*Surgical and Obstetrical Operations.*" It is not only a revised edition, but also an enlarged and improved one that Dr. Williams has published, and I am sure it will meet with as good success as the first. It contains more pages; it contains also several more plates, and, above all, has articles altered and, I think, made more scientific than in the previous issue. Among the principal changes that I notice in the second chapter is the introduction of a new operation (at least new for this edition), that for

roaring by excision of the vocal cords and ventricle of the larynx, and in the third chapter the operation for castration of cryptorchid horses. I certainly must congratulate the Doctor for having left out in this edition the old and barbarous method of amputating the tail. Such may perhaps be referred to in a work of general surgery, but ought not to be taught to young surgeons of our day. Keep on enlarging your little book, Doctor, and you will soon give us a large work on Operative Surgery. All of us will welcome it, I can assure you. A. L.

MILK HYGIENE THE TOPIC OF THE HOUR.

There is undoubtedly an awakening of interest all over this country in the question of the quality of the milk being consumed in the large cities. At last there seems to be a realization of the fact that milk, more than any other food product, is the most likely transmitter of the organisms of the deadliest diseases which affect mankind, aside from the changes which occur in milk itself as a result of gross errors in producing and handling it, or on account of its age. The daily papers are printing long articles dealing with these newly recognized dangers, and it is being shown that the organisms of typhoid fever, scarlet fever, diphtheria, tuberculosis, and other diseases are readily conveyed to individuals through a contaminated milk supply. While the necessity for the supervision of the hygiene of this universal food is being shown, there appears as yet to be no well-defined plan as to how this shall be done. There are a number of theoretical interests struggling for recognition, each contending that its system is the only one which can render milk wholesome. Those who believe that pasteurization is the universal panacea are particularly loud in their claims and insistent in their demands that no milk shall be permitted to be sold unless it has undergone this treatment; the bacteriologists contend that the bacterial count is the true index to the quality of milk that may be consumed by people with safety. But there are few, outside of members of the veterinary profession, who take the rational view that the source of the

supply is the point which should be attacked in order to deprive milk of its gravest dangers. If a decomposing animal carcass were perchance to find its way into the spring and pollute the drinking water, the sanest thing to do would be to remove the offending object from the spring, rather than to search for the number of organisms liberated in the water, or the process of heating the water to destroy the bodies of the germs present. So it is with milk production. Inspection of the source of supply by those who are competent to inspect will remove the factors of contamination, and if no errors are committed in its transportation, the quality will be right when it reaches the consumer. If a contagious disease exists in the herd which furnishes the milk, every diseased cow can be removed, and at once the danger from that source will be done away with; if transmissible disease affect human beings of the farm, steps can be taken to prevent their excreta from gaining access to the drinking water of the cattle or otherwise contaminating the milk products of that farm; if the hygienic conditions of the premises are faulty to an appreciable extent, the inspector can be clothed with sufficient authority to compel compliance with reasonable regulations by withholding permission to market the products of that farm until the improvements suggested are made. And by thus starting the milk from the farm in a practically pure state, and regulating its transportation and distribution, there will be little necessity for the heating of the milk to cook the disease-producing organisms, or of counting the germs in promiscuous specimens, condemning those which reach or exceed the prohibited number, irrespective of whether they are harmful or harmless. It has, for instance, been shown that a given specimen may contain a million bacteria to each cubic centimeter without rendering the milk unwholesome for human consumption, while on the other hand the bacterial count may be very low, yet the organisms may be of the most virulent type, for they may consist of tubercle bacilli, the bacilli of diphtheria, typhoid fever, or other serious disease. The mere enumeration of the organisms does not reveal their characters.

It is not the purpose of this article to deal exhaustively with the details of the various processes which are at present contending for recognition; that may be left for scientific discussion by those who have and are studying the problems technically. But it is our object to endeavor to impress upon veterinarians the fact that a great opportunity has arisen for them to again demonstrate to the world the value of veterinary science to mankind by not only pointing out the true and logical course to pursue to safeguard the milk supply, but they must lead in the movement; they must demonstrate the correctness of their position by doing the work. Every veterinarian must make of himself a veritable milk hygienist; he must know more about the subject than any other class of men who live upon the earth, whether they be members of the medical profession, bacteriologists or chemists. Above all, he has right and reason on his side, for he starts right by guarding the health of the cow that produces the milk, her environments, and the protection of the product from the time it leaves her udder until it enters the homes of the consumers.

Now let the veterinarian take advantage of his opportunities. First, he must educate himself, if his early advantages were not such as to have perfected his education along this line. The schools can no longer afford to ignore the chair of dairy and milk inspection, but must bring it prominently forward in their curricula. Those of our profession who have given great study to the important problems involved must take the initiative in forwarding the campaign of education, not only among their fellows, but they must direct the public in the proper channel of thought, to the end that enabling legislation may be secured to put into operation a thorough scientific inspection of every dairy which seeks to sell milk for the consumption of human beings.

The question is pressing strongly for solution; it will be but a short time until definite action will be taken—right or wrong.

Will the veterinarian lead; or will he follow?

BUSINESS EXHIBITS AT MEDICAL CONVENTIONS.

To those members of the American Veterinary Medical Association who have expressed disapproval of the custom of business firms exhibiting their wares in close proximity to the meeting room, with the approval of the officers of the Association, under the impression that it is unethical and partaking too much of commercialism, we commend an editorial in a recent number of the New York *Medical Journal.* Not that veterinary ethics need necessarily follow the usage in our sister profession, but the same gentlemen who criticize our methods usually hold before our eyes the conduct of the American Medical Association as the *sine qua non* to govern our actions in all such matters. The editorial in question was called forth by a circular recently issued to the members by the president of the American Surgical Trade Association, in which he says: "I ask your consideration and assistance in the important matter of medical convention abuse, which I intend making a feature of in my annual report. You are all aware of the exorbitant prices charged exhibitors for space and the detriment to our business by the exhibits of firms whose goods and methods can never merit the approval of the American Surgical Trade Association. Medical organizations must sooner or later recognize this if they desire our support at their meetings. This is one of the subjects where medical ethics has long been overlooked." The comments of the *Journal* are decidedly conciliatory, and it significantly remarks that it fears by the present policy that "*the goose that laid the golden eggs might be killed.*"

The policy pursued by the A. V. M. A. of requiring business firms to exhibit their goods in private rooms, outside of the convention hall, while devoid of remuneration to the Association, is in greater harmony with sincere medical ethics, and more magnanimous to those soliciting the patronage of veterinarians.

THE Ohio, Indiana, and Kentucky Veterinary Medical Associations have under consideration the formation of a tri-state meeting for next summer.

ORIGINAL ARTICLES.

THE SO-CALLED UPWARD LUXATION OF THE PATELLA OF THE HORSE.

(THE HOOKING OF THE INTERNAL PATELLAR LIGAMENT OVER THE INTERNAL CONDYLE OF THE FEMUR.)

By W. L. Williams,

Professor of Surgery and Obstetrics at the New York State Veterinary College, Ithaca, N. Y.

Presented to January Meeting Veterinary Medical Association New York County.

The stifle joint or knee of the horse offers the widest variation in form according to the position of the limb and the greatest complexity in its anatomy of any articulation in the body. Under these conditions it is not strange that there are conflicting views regarding diseases and accidents to this articulation and that among these we should find the greatest diversity of opinion in reference to dislocations of the patella, a bone which is subject to the widest latitude of movement to be found in the entire body. The conflict of opinion upon the question of patellar luxation has created the wildest confusion in veterinary literature, and although it has been discussed for a century we are still far from a clear and authentic description of the displacements to which this bone is subject.

Some points in the controversy are reasonably clear. We meet in practice, in all our domestic animals and especially in the horse, with a lateral luxation of the patella which may be caused by a congenital defect in the external condyle of the femur. In other cases in young animals it becomes established through a synovial distension of the capsular ligament of the patella largely as a result of rachitis or omphalo-phlebitis by which means it is lifted up above the external condyle and is drawn outward by the contraction of the muscles attached directly to its lateral side or to its external ligament. More rarely it is certainly possible for the patella to be dislodged externally by means of violence. Presumably also such violence

might be encountered as to cause a displacement of the patella inward over the internal condyle, though no such case has been recorded which was wholly free from doubt. The displacements of the patella due to great violence are not of much practical interest to the veterinarian, because they occur but rarely and would then be accompanied by such injuries to the ligamentous apparatus as to well-nigh preclude the possibility of recovery. The lateral or outward luxation is readily verified by post-mortem examination.

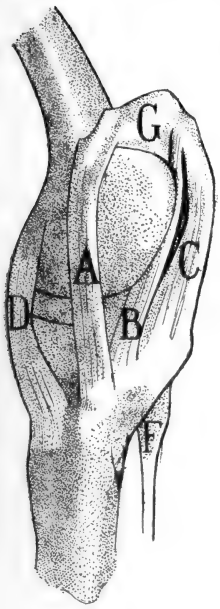


FIG. 1.

Classic illustration of the so called hooking fast of the internal patellar ligament over the internal femoral condyle, dependent upon a false dissection of the joint. The fatty cushions and aponeuroses have been dissected completely away.

A. Internal patellar ligament.
B. Middle ligament.
C. External ligament.

The great controversy regarding dislocation of the patella centres about the alleged upward luxation, or the hooking fast of the internal patellar ligament, over the internal femoral condyle. The confusion in the controversy is greatly heightened by case reports which are indefinite in character. Because of the anatomical complexity of the part, to which we have already alluded, different practitioners interpret variously those cases expressed by the sudden appearance of great rigidity of one or both posterior limbs, occurring invariably in a standing horse, almost always in the stall, the foot is apparently immovably fixed to the floor, and when the animal is forced to move, drags its limb behind it, intensely rigid, with every joint fixed except the hip. One practitioner, examining a given case, will conclude that the patella is dislocated laterally, like Percivall and others; another practitioner of equal standing, such as Moeller, Hoffman, and other recent writers, will examine the same case and conclude that the patella is dislocated upward, and a third veterinarian will be just as certain that no dislocation whatever exists. Under such conditions it is difficult to present conclusive arguments

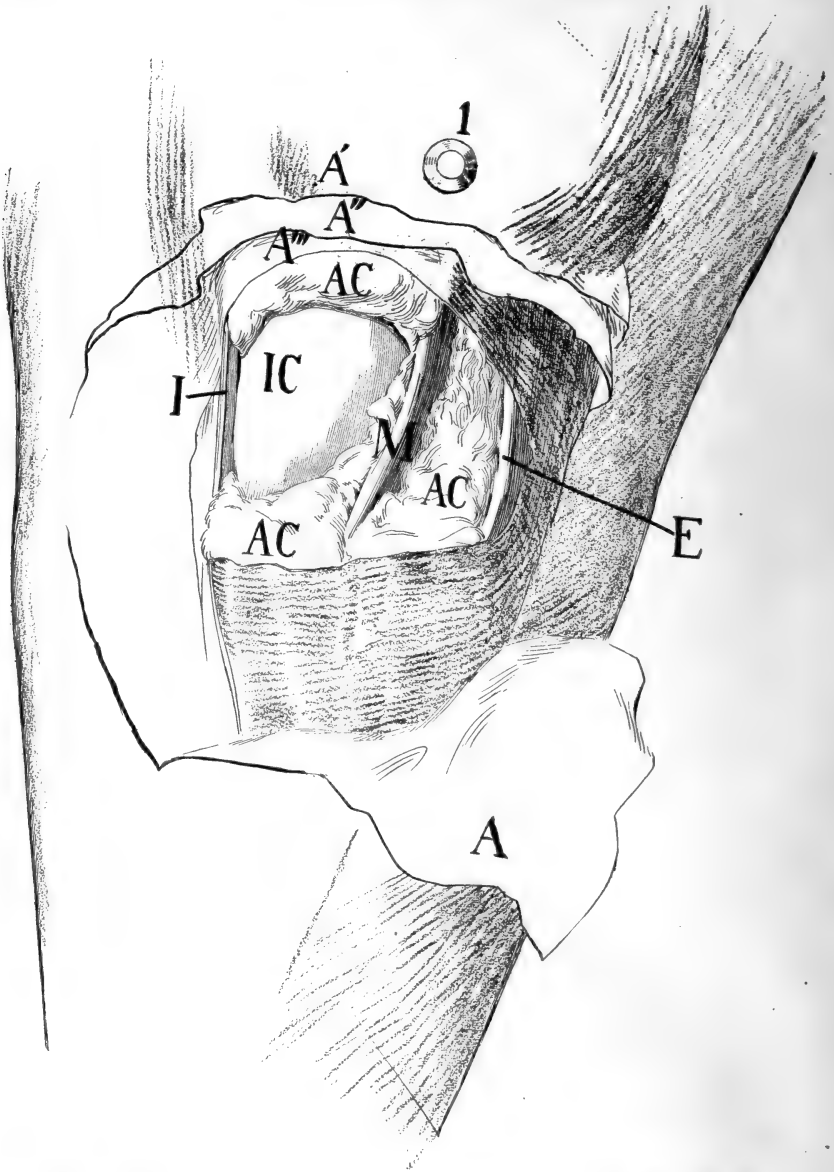


FIG 2. Dissection of the left stifle of a horse seen from in front. The skin has been completely removed.

A. The aponeuroses turned downwards from the deeper parts, A' A'' and A'''. Successive layers of aponeurosis incised at different levels.

AC. Adipose cushions. The superior one is enclosed between the synovial membrane and the deeper aponeurotic layer, A'''.

I, Internal patellar ligament. IC, Internal femoral condyle. M, Middle ligament.

E, External ligament. 1, Head of iron bolt passing through patella and femur to hold former in position of alleged upward luxation.

in reference to this somewhat mysterious affection, which is by far the most common of the alleged luxations of the patella.

We are well aware that virtually all of our recent authors upon veterinary surgery are a unit in holding that the affection consists of a hooking fast of the internal patellar ligament over the internal femoral condyle, against which conclusion we wish to submit some points of evidence.

The first argument which we would submit against the theory commonly accepted is the anatomical improbability of the occurrence. The profession at large is familiar with the classic illustration of a dissection of this articulation intending to show how the internal ligament becomes hooked over the condyle. We have copied this figure from the "Handbook of Veterinary Surgery and Obstetrics," by Bayer and Fröhner. This illustration, Fig. 1, is unjust, and depends upon a false dissection. Two essential structures have been removed in order to bring about the deceptive appearances which are here noted. They have dissected away the fatty cushion upon which the patella rests when drawn upward as far as possible upon the femur, as shown at AC, Figs. 5 and 6. They have also removed three important layers or fascia or aponeurosis as shown in Fig. 2 at A′, A″, A‴, and the fatty cushion, AC, and the synovial membrane upon which it rests. These items are of prime importance and their removal greatly modifies the correctness of the illustration.

If we study Figs. 5 and 6, the action of the fatty cushion becomes very evident and shows the practical impossibility of pushing the patella into the position which the false dissection in Fig. 1 would indicate. Some writers evade the influence of the fatty cushion between the femur and patella by evoking its atrophy in emaciated animals. The drawings presented are from greatly emaciated, old dissecting subjects, in which class of horses the alleged dislocation does not occur. The disease is most common in young, plump horses or colts, where the fatty cushions are larger than here represented. In Fig. 5, the patella has been forced into as nearly the alleged position as

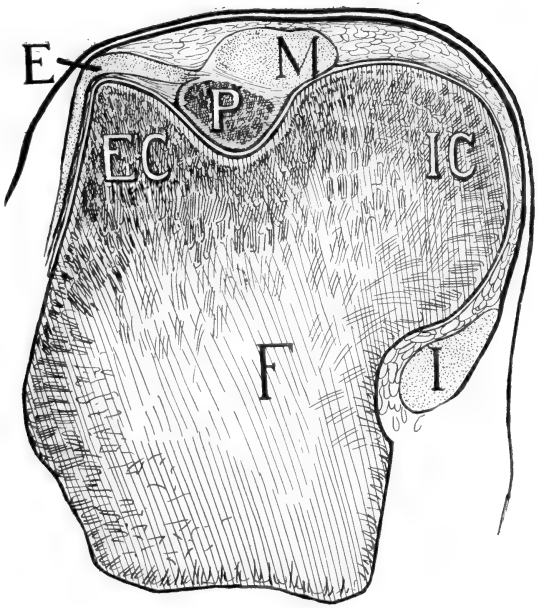


FIG. 3. Cross section through the lower portion of the patella and the femoral condyles. The patella is pushed upwards as high as possible, in the position of alleged upward luxation.

P, Patella at its extreme lower extremity. M, Middle patellar ligament at its point of origin on the patella. E, External ligament. I, Internal ligament showing a powerful aponeurosis passing from it over to the external ligament. IC, Internal, and EC, External condyles of femur.

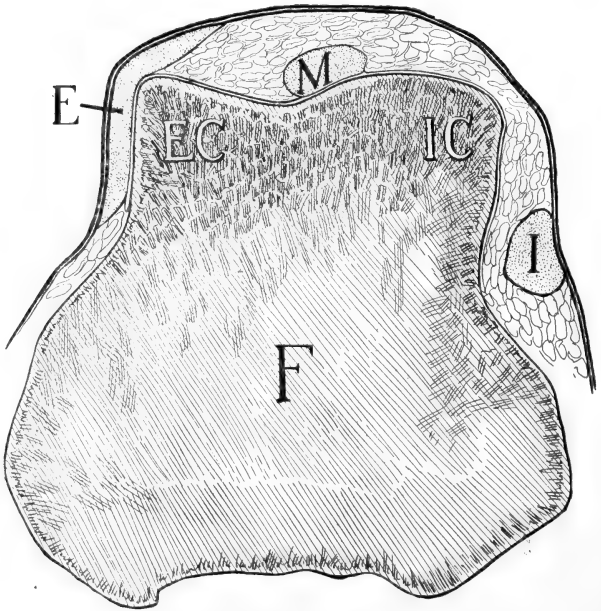


FIG. 4. A cross section of same joint as Fig. 3 at a lower level. Lettering same as in preceding. The aponeurosis is shown passing from the internal to the external ligament over the adipose cushion, while the middle ligament rests securely in the bottom of the trochlea.

possible by extending the limb forward and pushing the patella as far upwards as could be and fixing it there by means of a bolt passed through the patella and femur, and yet it does not seem possible that this bone should remain hooked fast over the condyle under the conditions which are here shown. If we turn to Fig. 2, we are again impressed with the improbability of this hooking fast. The three layers of aponeurosis, A′, A″, A‴, stretch across the entire region and are so powerful and so intimately connected with the internal and external ligaments that the condyle is prevented from projecting between the internal and middle ligaments so long as the fasciæ remain intact, and especially while the fatty cushion fills the space between the internal and middle ligaments and is held firmly in this position by the foregoing. If the aponeuroses were ruptured or strained, inflammation and lameness would result, which does not occur.

Whenever the muscles attached to the internal or external patellar ligament or to both are in a state of contraction they draw upon these aponeurotic sheets and by rendering them tense, force them down toward a level with these two ligaments and obliterate any great bulging between them into which the internal condyle might protrude.

Aside from the fatty cushion and aponeurosis the ligaments themselves are of such a character as to prevent the patella from becoming hooked fast as alleged. The most effective arrangements in this respect is shown in the middle ligament, the relations of which are illustrated in Fig. 6, where the longitudinal section of the joint is made through the middle of the trochlea. Here it is seen that with a very slight flexure of the joint the middle ligament is thrown upward by the trochlea in such a manner that the tension upon the patella is directed slightly upwards and would consequently tend to cause it to readily slip downward over the femur whenever flexion is begun.

In Fig. 5, the same idea is to some extent illustrated with the internal ligament, which is only partially in view, but is shown to be somewhat oblique so that it draws

across the summit of the internal condyle and thus tends to elevate the patella and cause it to slip over. In Fig 3, the cross section of the joint through the patella and the condyles again illustrates the obstacles to the hooking fast of this ligament. The close inspection of this figure will show that any tension exerted upon the external ligament, E, would tend to elevate the patella and thus obliterate it from

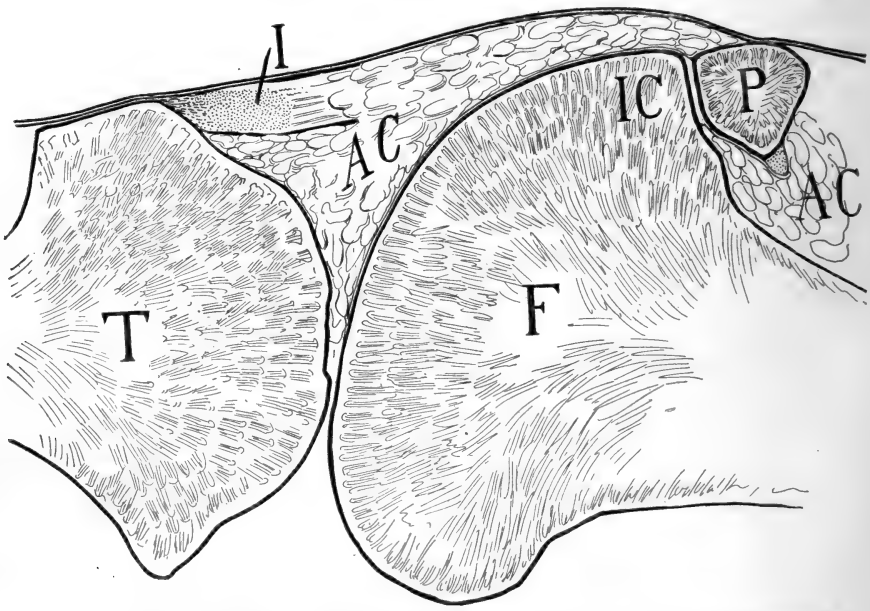


FIG. 5. Sagittal section of right stifle through the internal femoral condyle; the patella is forced upward as far as possible and secured in the position of alleged dislocation. T, Tibia. F, Femur. Other letters same as in preceding. The internal ligament, I, is severed obliquely and shows that it draws across the condyle in a manner to tend to release the patella. The heavy aponeurosis is shown attached to the patella and passing down to the tibia, over the adipose cushion.

any possible incarceration. The aponeurosis also clearly tends to prevent any undue projection of the condyle between the two ligaments. When a cross section of the joint is made a little lower down so that the patella is not involved as shown in Fig. 4, the improbability of this hooking fast becomes still more apparent because the external ligament is pressing upon the condyle in such a way as to tend to prevent such an occurrence,

while the middle ligament is resting directly upon the trochlea at a point which is higher than its attachment to the patella, and consequently draws upward upon it in such a manner as to cause its release. In addition to these considerations, even the false dissection delineated in Fig. 1, tends strongly to disprove the possibility of luxation, for if any one will take a joint thus dissected, and hook the patella upon the internal condyle, and then attempt to flex the articulation, it will be found that the patella promptly glides over the condyle, even though the specimen is old and synovia absent. If one desires to fix the patella in the alleged position, so that flexion cannot take place, it is found necessary to exert pressure upon the patella and hold it firmly down upon the femur. It, therefore, seems quite evident to us that a firm hooking fast over the internal condyle is an anatomical impossibility so long as the structures which we have outlined remain intact.

A second formidable objection to the theory of upward luxation is that the symptoms of the difficulty are not in harmony with the physiologic functions of the part. Such a dislocation as that alleged would extend the tibia upon the femur and would abolish all voluntary movement of all articulations of the limb from the stifle downward, but would not involve the movements of the limb upon the pelvis, and as a result, if the animal were forced to advance, the affected limb would be carried forward beneath the body and could not be extended backward, a condition which is directly opposite to that observed. The correctness of our view upon this point has been verified by experiment. A horse was chloroformed and the posterior limb extended as far forward as was possible, a hole was then drilled through the patella and femur, a strong iron bolt was inserted and the patella firmly fixed to the femur in the position of the alleged dislocation. The subject was then allowed to recover from the anæsthesia for a sufficient period of time to permit it to be walked for a short distance, after which it was destroyed. During progression the limb, the patella of which had been fixed in the position designated, was carried, rigidly extended,

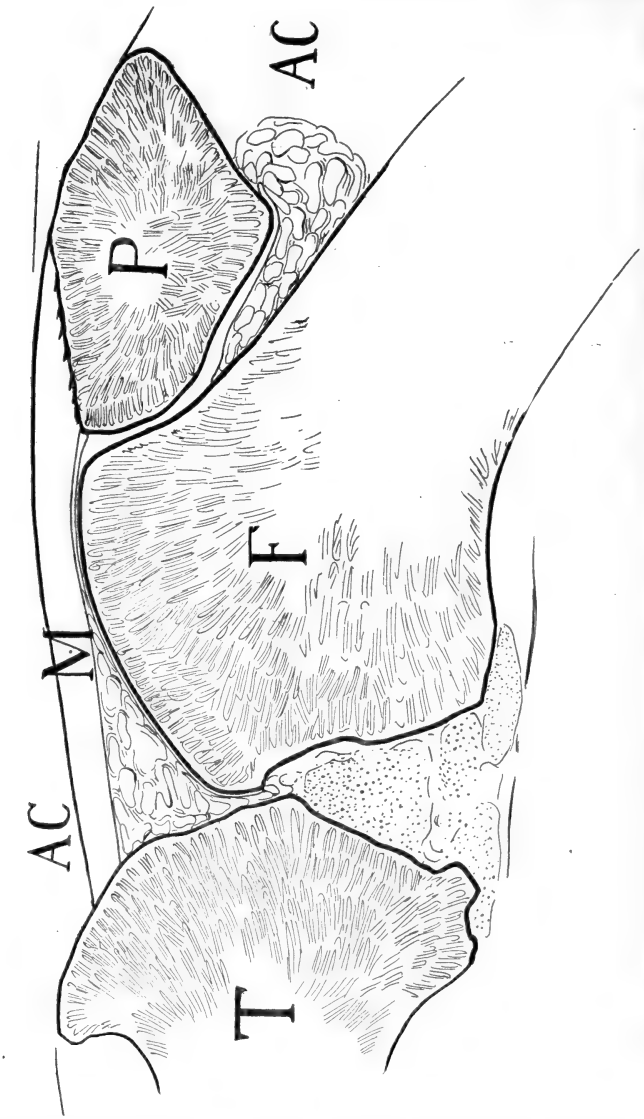


FIG. 6. Sagittal section of the right stifle on the median line through the deepest part of the trochlea of the femur. The lettering is the same as in Fig. 5. Owing to error the dotted line passing from AC to the adipose cushion beneath M at the top of the illustration has been omitted.

The middle ligament, M, is shown riding upon the trochlear surface and drawing upwards on the patella in a manner to release it from its position of alleged dislocation. The patella has been pushed up as high as possible immediately after death of the animal and the adipose cushion upon which it rests is compressed and forced aside.

forward beneath the body and could not be extended backward, as is uniformly the case in the so-called upward luxation.

In reference to digital exploration of the part, there is no agreement between veterinarians. As already noted above, the

findings of different veterinarians will vary according to their prejudices or theory of the causation of the difficulty. We have repeatedly seen cases of this so-called luxation where very eminent colleagues have declared that they could clearly feel the patella dislocated upward out of its normal position, but we have examined the same animal at the same time and according to our interpretation it was resting normally in the trochlea of the femur. Another veterinarian, like Percivall, believing in the lateral dislocation of the patella as the cause of these symptoms, would be just as confident that he felt the patella dislocated outward. In fact, we recall one instance which might well illustrate this uncertainty, in which an eminent veterinarian diagnosed a lateral displacement of the patella in a horse in which the movements were perfectly normal, but where there existed an enlargement upon its external border which was very prominent. This prominence alone, in spite of the contradictions afforded by normal physiologic movement, served to completely mislead this eminent veterinarian, who later admitted his error when his attention was called to the fact that the patella was clearly in its correct position and properly performing its functions, but bore upon its surface a very prominent enlargement which he had mistaken for the basic bone itself. It is evident, therefore, that the digital exploration of the part does not generally lead to an agreement as to the state of affairs.

Post-mortem investigations in regard to this alleged dislocation are alike unsatisfactory. No one has ever found and recorded this upward dislocation of the patella upon post-mortem examination. Each party to the controversy would give an explanation which would be satisfactory to himself. Those who believe that it is a dislocation or hooking fast would claim that the luxation had disappeared during the death struggle, while those who disbelieved in the alleged luxation would hold that the patella had simply remained in its normal position as it was before death.

Another important consideration in reference to this so-called

luxation, is the fact that similar symptoms occur in the anterior limb where we have no bone or other structure corresponding anatomically to the patella and its ligaments. In one case we have observed in a two-year old colt closely analogous symptoms to the so-called dislocation of the patella, in the anterior limb. The colt was found by us, standing quietly, and causing him to move, the anterior limb was dragged along the ground, perfectly rigid from shoulder to toe, and apparently incapable of being bent at any point. After being forced to move for some distance, the rigidity abated somewhat, and by continued urging he finally began to use the limb in a normal manner. Allowed to stand for a moment, the symptoms quickly returned as before, only to disappear again after a forced movement under the whip. After repeated trials of short duration he was finally given liberal exercise, first at a walk and then at a trot, until he was thoroughly warmed up, when all symptoms disappeared completely and permanently. The symptoms, history, course and termination in this case was apparently identical with the so-called patellar luxation.

The conditions surrounding the origin of the difficulty are such as to deny the alleged luxation. Luxation should occur chiefly as a result of some violence, either of a blow or a strain, of over-extension or flexion, but in this case the difficulty invariably occurs spontaneously and in the standing animal only. Some authors have spoken in a general way of its resulting from violence, but have submitted no intelligible record of such cases. So far as we have seen from our personal experience or the recorded observations of others the difficulty appears when the animal is standing motionless, usually in the stall. We find an animal with the so-called dislocation, standing quietly in the stable, without any appearance of discomfort or disease and only discover any defect when we require it to move. If we force the patient to move suddenly, or otherwise produce great agitation, we find that the symptoms disappear and the animal moves wholly normal, or if we believe thoroughly in the luxation theory, and we go through any prescribed method for

replacing the patella, such as extending the limb forward by means of a sideline and then pressing the patella outward or inward, or upward or downward, according to the view of the practitioner, the symptoms likewise disappear, or we get the same result if we cast the animal and bring about an alleged reposition by any method which we like, or if the animal falls and then gets up again, we find that the symptoms have disappeared and the horse moves normally so long as we keep him going. If we halt him for a moment, before we have thoroughly warmed him up, the alleged dislocation probably recurs immediately and we must again go through the form of replacing the patella. This certainly seems unlike a dislocation or hooking fast of the patella. If the allegation were true, the displacement should occur sometimes when the animal is down and especially when accidentally cast, but this is not in accord with clinical experience. If the allegation were true, we should also meet with the accident during progression, especially in an animal which has suffered from the alleged luxation recently, either for a long period of time or several times at intervals. We ought to observe the "luxation" on the road and especially in the severe extension of the joint in heavy draft or upon the race track, to the greatest degree perhaps, in hurdle races or hunting, but it is never seen under these trials.

The results of treatment, as bearing upon the nature of the malady are highly conflicting. All cases of so-called upward luxation eventually recover under any form of treatment or under none. One group of practitioners extend the affected limb beneath the body and retain it there by means of a sideline and ultimately they get recovery, although the process to which they resort is in direct conflict with their theory of the cause. If it is a hooking fast of the patella over the internal condyle, they simply favor this condition by placing the limb in that attitude where a recurrence of the luxation would be invited. Another group of practitioners resort to the "stifle shoe" by which means they force the animal to maintain the articulation in a state of flexion. This is the most rational treatment in case the

theory of luxation is correct. A third group of practitioners rely upon the division of the internal patellar ligament and claim to cure all the cases upon which they operate which, of course, we accept as correct in so far as the ultimate recovery of the animal is concerned, because as we have already stated they are all eventually restored to health. It is not clear how the division of this ligament can bring about a permanent recovery even if the theory of its adherents be correct. The ligament is eventually re-united and the friends of the operation allege that it is thereby elongated. If this be the case, then it seems to us that the operation would invite a recurrence of the affection as soon as healing had occurred, because the elongation of this ligament would allow the patella to be carried still further upward. A fourth plan is recorded by Ryder (AMERICAN VETERINARY REVIEW, Vol. VIII, p. 446) in which Liautard, apparently for this same trouble, divided the long vastus muscle, which was ultimately followed by recovery. A fifth group of practitioners, who do not believe in the existence of a luxation or hooking fast of the ligament, apply another line of treatment which consists essentially of forced movements of the animal or of massage of the region or of some constitutional remedy which may tend to overcome some physiological disturbance in the action of the muscles in the region. A large proportion of this group of practitioners take a keen whip and startle the animal suddenly into moving or by any other means, which would give the animal a sudden start, obtain relief from the difficulty. Others, like the late Professor Williams of Edinburgh, administer a purgative to overcome the difficulty. Percivall, calling it lateral luxation, cured it with a purgative, if mechanical replacement failed. Like the other groups of practitioners, their results are satisfactory and eventually they obtain recovery in every case. These conflicting experiences in handling the affection do not set the question of its nature at rest, but it seems to us that the clinical facts support our contention that it is not a dislocation.

Another strong argument against the luxation theory is the

after effects of the disease. In one case we will see an animal which has suffered for a few hours only, in another it has recurred daily for weeks or even months, and yet in other cases the malady has been constantly present for a long period, and the animal has stood as if riveted to the floor for weeks together, and yet in none of these cases do we ever find any inflammation or lameness, or disease of any kind persisting in the part which can be referred to the malady itself. It seems to us impossible that such a dislocation or hooking fast could take place repeatedly or exist for a long time without causing some sort of pathologic change in some part of the apparatus, but this never occurs. In applying the "whip" treatment the movements of the animal are quite violent, and if the ligaments were caught over the condyle it would seem impossible to avoid severely straining or even rupturing them during the violent exertions which the animal is forced to make, and yet no such result has been recorded so far as we can find.

It seems to us, therefore, that the majority of the evidence is overwhelmingly against the theory of luxation, no difference from what point of view we examine it. Such a conclusion leaves the question as to the nature of the malady unanswered. Most of that group of veterinarians, who disbelieve in the theory of luxation, ascribe the malady to a cramp of the muscles extending from the femur to the patella, especially of the vasti group of muscles. This seems to us very doubtful because such a cramp of this group should produce the same effect as our experiment of bolting the patella to the femur. It seems to us more probable that the affection is due to a chronic cramp of the long vastus and other muscles of that region which pass forward and downward from the region of the ischium to become attached to the patella, either upon the outside or inside, directly to the bone or indirectly to its ligaments. When these act upon the patella of the standing animal they serve to fix the stifle joint, and when the patient is in motion they would, in a state of cramp, draw the limb backward and keep it in a rigidly extended condition.

Under these conditions and holding such belief we naturally prefer the "whip" method of handling the disease accompanied by such other care as may tend to invigorate the constitution, and especially insisting upon regular, vigorous exercise. This treatment has the advantage of simplicity and promptness and is equal to the others in the ultimate result since all cases recover. It has a distinct advantage in practice which might be illustrated by a case occurring recently. Two young veterinarians, imbued with a firm belief in the luxation theory, were trying to establish a practice. They were called to a stable of valuable animals, the patronage of which they greatly desired, to see one suffering from this disease. They prescribed slings with the foot to be held forward in extension for a period of two weeks or more and the application of a blister over the stifle. The manager of the stable did not like to take the horse out of work for so long a period, and consequently called in a self-educated veterinarian, who prescribed the "whip" treatment and returned the animal at once to his regular work with complete satisfaction. We repeatedly see other cases in actual practice where the conditions are very similar.

ANSWER TO CORRESPONDENT.—*Andrew Frey, V. S., Attica, Ohio:* The new castrating instrument described on page 1140 of January REVIEW is manufactured and sold by the instrument house of H. Hauptner, Berlin, Germany; none have, to our knowledge, been imported into this country.—(Editor REVIEW.)

AUTO DELIVERIES.—The Scott Dry Goods Co., of Cleveland, Ohio, has published the following notice to the public: "Our deliveries since June first have not been up to the Scott standard. Owing to the steady increase in trade, we changed our delivery system from horses to autos, thinking thereby we would give our patrons better service, but after a few months' trial we were compelled to change back to horses and add more wagons, in order to take better care of our increasing business. We regret our efforts to better the service have not been satisfactory and beg to assure our patrons we are in a position not only to deliver goods promptly but to again promise the best delivery system in the city. In a short time wagons with our name and trade mark will again be familiar sights on our city streets."

THE AMERICAN VETERINARY INSPECTOR AND HIS FRENCH CRITICS.

A REPLY TO PROFESSORS LECLAINCHÉ AND LIAUTARD.

By D. Arthur Hughes, Ph.D., D. V. M. (Cornell).

Inspector Subsistence Dept., U. S. Army.

If there is any nation to which the whole of the English speaking peoples owe obligation for a revelation of the extent of the field of veterinary science, that nation is France. Just as in art, letters and diplomacy French manners and polish have influenced us; so also in the field of applied science we owe much to French investigators and French teachers. It was the equerry of Louis XVI. who laid the foundation of the Royal College of Veterinary Surgeons, London; it was a Frenchman, none other than Dr. Liautard himself, who founded the first veterinary college in the United States. We make, therefore, our devoir to France, freely acknowledging what we owe to her. Strangely enough, however, the criticisms of Professors Leclainché and Liautard of the American method of choosing its veterinary inspectors is, in reality, a criticism of a man equally cognizant of French methods and American conditions and needs, a man who had studied at Alfort, who was honored by Frenchmen with membership in its scientific societies, and who instituted in America the method criticised, never changing it during twenty years—none other than Dr. D. E. Salmon himself.

Dr. S. Bennett, Chief of the Inspection Service in Chicago, in the midst of the criticisms of the abattoirs established in that city, expressed the opinion that there was no part of the work that had not been probed by somebody. Still the end is not yet, for, just as the reform is becoming definitely effective, come along French scientists to criticise the method wherewith we choose inspectors. That certain changes probably would be made in the method was not unforeseen by us, as I pointed out in my article, "Prominent Veterinary Problems of To-day,"

printed in the REVIEW, January, 1906. No one, therefore, will accuse me, in replying to Drs. Leclainché and Liautard, of attempting to block the wheels of veterinary progress.

Things are never quite so bad, nor quite so good, as critics are apt to make them out. The opinions of Professors Leclainché and Liautard are based on a misapprehension of the method of choosing inspectors in America. The bituminous, Gallic imagination, excited by the fictitious pages of "The Jungle," is in no condition to consider anything judiciously. When Professor Leclainché turned to the cold printed paragraph in the U. S. Civil Service Manual, giving a short statement of the requirements for the government inspectorship, it must have seemed very poor indeed. Though, of course, I cannot in any sense make an official reply to our critics in France, I can with censure probably personally draw attention to certain points which explain the routine adopted, and so far always carried out, in the choice of American Veterinary Inspectors. Perhaps, when we have gone over briefly the method wherewith Inspectors are chosen, adding much that cannot be found except here and there in the Civil Service documents, vouchers, the law, rulings on the law, Dr. Liautard will not feel so sad and disappointed in the methods of the American Government, nor will he think we are placed in "the disgraceful condition" when compared with those of Europe, "at least so far as the requirements for the position are concerned."

What I will endeavor to do will be to justify American methods in the light of American conditions. In doing so I will ask: What is the American method; how can it be justified; what changes can properly be made in the subjects of the examinations, and the circumstances which will bring the changes about.

Veterinary Inspectors of the Bureau of Animal Industry, Department of Agriculture, belong to the U. S. classified executive Civil Service list, which, in its totality, embraces 275,000 persons with salaries aggregating $175,000,000 per annum. As the choice of veterinary inspectors is made under a national

law operative, under the U. S. Civil Service Commission's rulings, in the many kinds of candidature for the multitude of positions obtainable, the general method of choosing veterinary inspectors must conform to that for similar professional positions under the Civil Service law. Almost without exception persons are chosen for such professional office on the basis of abundant sworn statements as to his mental, moral and physical fitness shown in vouchers and a competitive written examination, which tests his professional knowledge.

The six-page, foolscap size, voucher or form to be filled in under oath by applicants for professional, scientific and technical positions gives the commission complete knowledge of the education and experience of the applicant, his general and technical training and degrees, physical abilities or disabilities, good citizenship—all in closest detail, in which he is supported by numerous questions answered by two reputable American citizens, the whole document being sworn to before a notary under his official seal.

The examination, *before entrance to the Veterinary Service*, is confined to a *written* test for several very good reasons: first, the examinations must be held simultaneously in every state of the Union to give every possible candidate an equal chance in the competition; second, the distances, geographically, in America, are so great, that it would be unfair to require candidates to travel far to take examinations of any other kind; third, it has been found that a written examination tests equally well a veterinarian for the veterinary service, a human medical doctor for the Public Health service, or a civil engineer for the National Surveys. As required by the Civil Service law, the examiners are professional men, leaders in the professional branch of the service at Washington. The names of the writers of the competitive papers are not known to the examiners. The papers are therefore marked with strict conscientiousness and impartiality by the examiners, and their findings are afterwards reviewed by a new set of examiners, before the final announcement of standing is made.

Turning now to Dr. Liautard's proposed changes to be made in the American method, we find that he desires that the examination should be confined to sanitary science and sanitary police, sanitary pathology and medicine, meat inspection, microscopy and microbiology, in which the competitor must have advanced knowledge. If Dr. Liautard had seen sets of questions set during the last five years by the commission, he would know that they range over all these subjects in the most practical manner. In addition they embody questions on the U. S. Meat Inspection laws and regulations, differential diagnosis of contagions, the quarantine rules against Texas fever, sheep and cattle scabies and diseases to be watched for in the quarantine on the seaboard. How, else, could the American inspectors have stamped out bovine pleuro-pneumonia and foot-and-mouth disease if they had not been required to pass in sanitary science and police?

The French have one way of testing the practical value of a candidate. We have another. I submit to Dr. Liautard whether or not our method is not better than that employed in France. Under the U. S. Civil Service law a man is not received as an absolute, permanent appointee until he has been passed through a six months' probation. Under the law a strict watch must be kept of the man to discover his practicality and general fitness during the first six months. At the end of that time, if he is inefficient, he is dropped summarily. Two things must be noted in the work of the temporary appointees: whether their work falsifies the statements made in the vouchers sent to Washington before the written examination was taken; whether they have actual knowledge of diseases in food-producing animals and ability to detect them. The temporary appointee is not sent to work alone, always in company with a permanent appointee. He is transferred from one kind of inspection to another every month, watched by the assistant chiefs and chiefs who make the round of the abattoirs at unknown times daily. The value or uselessness of the man being known, reports are made on him in secret correspondence to Washington. Report

is made of the quality, quantity of the man's work, his efficiency, deportment, punctuality and worthiness for work of a higher intellectual character. Strictly the American tests of a veterinarian for the public service are: a voucher beforehand which gives certification of his whole training; a written test of professional information; a practical test during the period of probation. The actual, practical test of a man for six months, whose antecedents, academic training and written examination are sufficient, is better than the bothersome, excitable test for an hour or two at a cattle market, as is French or Italian fashion.

How, now, can the American method be justified? First of all, by the necessity of the case. When Dr. Liautard quoted Sect. 208 of the U. S. Civil Service Manual, he neglected to add the printed line, "the supply of eligibles for this position (veterinary inspector) has never been equal to the demand." That sentence, properly understood, explains the whole situation of affairs. Why has the number of eligibles been unequal to the demand? First, because of the small number of graduates annually, from our veterinary colleges. They are perhaps not more than 750 a year, contrasted with the many thousands graduating yearly in human medicine. Second, because of the strong attraction of other fields of professional labor and the greater remuneration. The number of candidates for the American government service has always been few. This is aggravated at present by the enormous increase in the demand for men. Dr. Liautard asks the question, if there were added requirements for the position, would it be impossible to find candidates, would the change be so difficult to realize? He answers the question in the negative. In another place he quotes Professor Leclainché as saying that 150 new inspectors have been added to the American veterinary service. Probably both Professors Leclainché and Liautard labor under a misapprehension of the difficulties under which the Bureau of Animal Industry is so admirably working, while both of the French critics are in error in their view of the numerical in-

crease in the inspection force. George W. McCabe, the solicitor for the Department of Agriculture, in an address before the New York State Breeder's Association, Syracuse, N. Y., Dec. 18, 1906, states that under the old law there were 324 veterinary inspectors, while now there are 531. The number of establishments now under inspection is 632 and the number is increasing daily. The total number of employees engaged in the Meat Inspection on Dec. 1, 1906, exclusive of clerks necessary for the recording of correspondence, was 1,965. The force is made up of veterinary inspectors, stock examiners who are principally engaged in the ante-mortem inspection of animals, taggers who label the carcasses and meat food products, and meat inspectors, not to be confused with veterinary inspectors, who test meats to see if they are tainted, and look after their cleanly handling.

According to the *Arrêté* concerning the organization of the veterinary sanitary inspection service of Paris and the Department of the Seine, published January, 1905, the total number of French government veterinarians for Paris and its environs was hardly more than 68, with 24 *surveillants*. It is easy to see how so few veterinarians as Paris, the largest city of France, needs for its veterinary service can be easily supplied from large and influential national veterinary schools like Alfort, Lyons or Toulouse, as required by the French law. But when it comes to the need, as in America, of large quantities of graduate veterinarians to enforce a national meat inspection law which has so recently come into being, surely the French critics can see the difficulties under which the Bureau of Animal Industry is laboring.

There is no doubt about it, whatever Dr. Liautard's opinion may be, that the American government, because of the economic law of supply and demand, has difficulty in getting sufficient candidates of the right stamp to conduct its inspection. A story of U. S. Civil Service Manuals shows that out of 200 candidates the average is that about 70 pass. The perplexities of the Chiefs of the Bureau of Animal Industry are enough for the

moment, without adding the greatly increased difficulty of obtaining inspectors.

The principles of veterinary medicine, the scientific knowledge to be obtained and applied, are the same for France as for America, but the French method for choosing inspectors will not do for America at present. There is a constitutional reason for this. The analogue of Parisian inspection, and the choice of inspectors for such cities as Paris (the kind referred to by Dr. Liautard) is that of the European *municipal* inspection. We have nothing of municipal inspection in America in the Parisian sense of the word. When compared with the municipal inspection in Paris our cities in America are in a ridiculous plight, disgraceful in the extreme, as I shall show later in a paper to be written for the REVIEW. But, as far as prerogatives can be given federal inspectors under constitutional limitations, the work is done well, and inspectors are rightly chosen. The method of choice of inspectors which is thrust before us as a model we should follow is the method followed by the municipality of Paris and similar European municipalities. The cities of America could pattern after Paris and require written, oral and practical examinations for candidates. But the federal authorities, in choosing men to inspect food animals and meats going into interstate and export trade, must, for the reasons I have given, adopt a different method to choose inspectors, a method which could justly and equitably be carried out alike in San Francisco, the centre of the American continent, or at a point in distant Maine, and that method could only be a *written* test.

Furthermore, the American method of choosing inspectors is justified by its success. If the American veterinary inspectors had conspicuously failed on any one of the important occasions when their scientific knowledge or judgment was needed in the prevention or suppression of contagious diseases among animals; if they had not exercised their prerogatives fully and completely under the limited power allowed them under the meat inspection law of 1891; if they did not prove themselves

equal to the task imposed on them under the federal law of June 30, 1906; if, in short, their work, as shown practically in the abattoirs, on the quarantine lines, and in emergency when dreadful animal scourges devastated the country, had been a failure, there would be abundant reason for opprobrium. Professor Leclainché, perhaps boiling with anger at the vexatious imagining of Upton Sinclair, and not knowing the falsity of that vapid writer's statements about the U. S. Government Inspectors, was in no frame of mind to have his attention drawn to the following facts: First, the inspectors, up to June 30, 1906, in the abattoirs, performed to the letter everything the old law of 1891 allowed them to do; Second, the same inspectors, their prerogatives increased covering ante-mortem and post-mortem inspection, sanitation in the abattoirs and adjoining yards, supervision of all food-making processes, standardizing of products chemically, microscopic work for determination of exact pathologic conditions in doubtful cases—in all is giving complete and universal satisfaction to the millions of American people and we feel sure will shortly inspire the confidence of all countries with whom these United States of America deal.

What changes, we may now ask, may be made in the subjects of the examinations and the circumstances which will bring the changes about? Sifted to the bottom it will be found that the main difficulty in drawing candidates in sufficient numbers to try competitive examinations for the position of Veterinary Inspector, and to retain men of their own volition when once obtained, is the fact that the remuneration offered at the start is believed to be insufficient, and that the increase in pay, for length of service and efficiency, is not thought to be enough to inspire the men to remain in the Service for a lifetime. America is a nation of great financial opportunities, especially for the well-trained veterinarian. Of late the lower grade men in the service of the Bureau of Animal Industry, stock examiners and taggers, who are the assistants of the veterinary inspectors, have had their ratage of pay materially increased, the ratage to vary with efficiency and length of service. Should the finan-

cial ratage of veterinarians in the Government service be likewise changed to make the office financially attractive, the number of candidates for the office would be greatly increased. This is the solution of the problem. Under these circumstances examinations for entrance to the service, as well as examinations for promotion with increase of pay, could be made as difficult as desired.

With attractive remuneration and the multiplication of candidates what change would occur in examinations for entrance to the service? The need for an examination in such rudimentary subjects as arithmetic would be swept away in an instant. The veterinary colleges would be compelled to require a good secondary education before men could enter their doors, else their graduates would not be allowed to try Government examinations by the U. S. Civil Service Commission. Instead of seven hours being allotted the rudimentary and technical examinations, as at present, the whole seven hours would be given up to the scientific papers. They would be made far more searching and would be similar in scope, though directed to a test of *specialized knowledge in veterinary subjects*, to the seven hour human medical examination for the position of Acting Assistant Surgeon in the U. S. Public Health and Marine Hospital Service or that of Hospital Interne for the Isthmian Canal Service. (Sects. 40 and 122, Civil Service Manual, July 1, 1906.)

Far be it from me to hinder by a hair's breadth the Titanic energies of such men as Dr. Liautard, who are devoted to veterinary progress, in their efforts for reform. The end we seek is the same—higher standards for entrance to the American Veterinary Service, better trained men in the Public Service. Though I cannot but feel that Dr. Liautard misapprehends American conditions if he thinks we can take over bodily French and Italian methods for the choice of men for the federal service, in essence we agree. Our ideals are the same: we differ only in their application. Let us by all means adopt, in so far as we may, European standards, but let us adapt them to American conditions.

THERMIC FEVER.

By C. G. Glendenning, Clinton, Ill.

Read before the Illinois State Veterinary Medical Association, July 12, 1906.

In writing on this subject, it will not be my purpose to take up in detail the physiological changes which take place in the animal structure during the many acute and chronic affections produced by exposure to extreme heat. If possible, I want to arrive at the most practical method for the practitioner to use in handling this disease.

The complex animal organism, which is controlled by the more complex nervous system, when exposed to extreme heat and forced to extreme exertion has given rise to many varied symptoms and conditions. This has caused the profession to be long in coming to a definite and correct course of treatment. The many conditions in the horse the practitioner is called upon to prescribe for during the damp sultry days is often puzzling, and it is hard to decide on the most effective treatment. While this is one of the oldest known diseases, its varied symptoms have given rise to a great variety of names. But whether we call it heat exhaustion, sunstroke, isolation, thermic fever, etc., the immediate cause of all these conditions is exposure to extreme heat in some way. Therefore, in this paper I will consider all conditions due to exposure to excessive heat by the term thermic fever. But the treatment will necessarily be varied to suit conditions, and individual cases.

At one time it was thought that exposure to the direct rays of the sun was the chief cause. It has been demonstrated in human practice that such exposure is in no sense necessary, and complete darkness is no protection. Many cases occur while people are at work in buildings, and while marching at night. If our patients were forced to violent exertion while in some of our poorly ventilated stables, they would suffer with thermic fever as do the human. I remember one case in a horse to which I was called that occurred while driving during the night.

It presented the same conditions as those affected while working in the heat of the sunlight. Therefore we believe that thermic fever is due to exposure to excessive heat. Yet, there are certain conditions which act as predisposing causes by lessening the power of the system to resist heat, viz. :—High stimulating diet, irregular exercise, a lack of an abundance of pure drinking water, overwork, causing excessive bodily fatigue, any derangement of the digestive system, and certain climatic conditions, such as a moist sultry atmosphere, etc.

Symptoms.—The attack may be very sudden or it may be preceded by well-defined signs. Even in the most acute cases the driver, if a close observer of his team, will note changes in the action and appearance of the animal that should warn him to seek the shelter of shade and rest. This would possibly prevent the more acute symptoms. The preliminary signs are the perspiration ceasing ; the skin becoming hot and dry ; accompanied with short anxious breathing. The animal may become slightly sluggish, which is soon followed by an apparent burst of energy, going ahead for a while at more than its usual gait, causing the driver to believe it is feeling better than usual. This, however, is only the painful blinding headache, which is soon followed by dizziness, staggering, and falling in a delirious semi-paralyzed condition, which often rapidly approaches complete coma. The pupil of the eye is usually contracted ; the mouth is hot and dry ; thirst is intense ; bodily temperature ranging from 106 to 112° F., or it may be below normal, as low as 97 or 98° F. In most cases more or less gastro-intestinal derangement exists. In some cases there will be extreme motor relaxation, while in others there is a rigid tetanic convulsive muscular condition present. This rigidity of the muscles may set in while the animal is still on its feet, and the jaws become as firmly set as in any case of tetanus. The pulse is usually rapid, weak and intermittent, but I have seen cases with a slow full pulse, and others with a strong irritable pulse. These varied conditions have often tried the most ingenious of us to apply the suitable remedy.

From what I can read on this subject, and from my own observation, I have come to the following conclusion: That with a slow full pulse the cerebrum is the special seat of the congestion. The strong irritable pulse would indicate inflammation of the meninges or other vital parts. The low bodily temperature and depression of the vasomotor system would result from paralysis of the vasomotor centre. The extreme high temperature is due to paralysis of the inhibitory heat centre. The great muscular relaxation is possibly due to paralysis of the motor centres. The rigidity of the muscles is possibly due to the slight congestion of the motor centres, or perhaps due to formation of myosin, as muscle plasma coagulates immediately at 115° F., but when muscle is in great activity it coagulates at a much lower degree.

The Setschenow theory regarding the great difference in the bodily temperature is:—

That in the pons there is a centre whose function it is to inhibit the production of animal heat; and that in the medulla there is a centre (probably the vasomotor centre) which regulates the dispensation of bodily heat; and that fever is due to disturbance of these centres. Let an animal be placed in an atmosphere where it is unable to get rid of the heat, its body is foaming and they may suffer with a gradual thermic fever.

In this condition the inhibitory heat centre may become exhausted by the effort which it has been making to control the formation of heat, or become paralyzed by the direct action of the heat. Then, suddenly, all tissue will rapidly begin to form heat. The temperature will rise with a bound and the animal fall with an acute attack of thermic fever.

If this theory be true with the inhibitory centre, it is likely true with the distributing centre, causing collapse or a great depression of the vasomotor system, and rapid fall in bodily temperature.

In ordinary cases death results from asphyxia, or a gradual failure of both cardiac and respiratory action, largely due to paralysis of nerve centres. In the more sudden cases death

results by cardiac arrest, caused by coagulation of the heart myosin, causing immediate post-mortem rigidity.

Post-mortem.—The rigidity of the muscular system and heart; deterioration of blood due to excessive tissue change, the blood being dark and watery; abnormal engorgement of the veins and pulmonary arteries; and the rapid decomposition of the tissue.

After-Effects of Thermic Fever.—The mildest form of this affection leaves the animal more or less unable to stand heat. The cause of this must be chronic meningitis or some change in the heat controlling centres. This greatly depreciates the value of the animal.

Treatment.—There being two or more distinct conditions of the animal body which are produced by exposure to extreme heat, they have certain similarity in their symptoms, yet they are widely different in their pathology and they require directly opposite methods of treatment. In all cases the treatment must be prompt and energetically carried out; delay in applying proper remedies allows this disease to pass beyond a restorable condition. The bodily temperature must be lowered as soon as possible. In our patients that we find down in the field or on the street, it requires considerable time before they can be moved; cold baths should be applied to the body immediately and kept up continually until the fever drops below 103° F. This can be done with a sponge and bucket of cold water; or, if a spray is at hand, give a shower bath, occasionally turning the animal over. It is very important to shade it from the rays of the sun, and give plenty of fresh air. Moisten the mouth with cold water, and if it will drink, give it a few swallows every few minutes. Where the heart is weak, give stimulants; whiskey in two to four ounce doses every fifteen or thirty minutes, as case demands. Nux, digitalis or ammonia may be used. Antipyrine is recommended to be given hypodermically to lower the fever. I have never used it, as I depend largely on the cold baths. In cases where the pulse is slow and full or strong and irritable I have received good results from bleeding,

followed by stimulants and acetanilid. However, great care must be taken not to reduce so much as to cause after collapse, and with a weak pulse never give sedatives or take blood.

In cases where there is great depression of the vasomotor system, the bodily temperature below normal, possibly the body covered with a cold sweat, heat should be applied. Blankets rung out of hot water applied to the body as vigorous as the case demands; give alcoholic stimulants; digitalis, nux, or belladonna. But in these cases the alcoholic stimulants must not be given too freely, as they, in large quantities, tend to increase vasomotor depression. Atropine, given hypodermically, is probably the quickest and best vasomotor stimulant. It causes rise in temperature by preventing waste of bodily heat.

When the delirium is passed and the animal regains consciousness and is able to stand, keep it quiet and cool; nourish properly and allow nature to restore a normal condition. If there is drowsiness or excitability continuing, it indicates meningitis or some cerebral disturbance, and should have the treatment usually prescribed for such conditions.

THE CHAMPION COW OF NEW YORK STATE was recently sold to a Maine breeder for $8,000.

IN renewing his subscription to the REVIEW, Dr. S. G. Hendron, Arlington, N. J., says: "I feel that my last three dollars have returned me good interest, and am sure that this investment will do equally as well."

THE UNIVERSITY OF URUGUAY is about to establish a veterinary faculty and a well-equipped veterinary school. The organization of the staff has been placed in the hands of Professor Peroncito, of Turin, who will occupy the position of director and the chair of parasitology.—(*Veterinary Journal, Jan.*) [This statement is evidently incorrect, as Dr. D. E. Salmon, late Chief of the U. S. Bureau of Animal Industry, is now engaged in the work of organizing the Veterinary School in connection with the University of Montevidio, and it is unlikely that Uruguay will establish two Government veterinary schools simultaneously. It is probable that Prof. Peroncito is organizing a veterinary sanitary police service for Uruguay. Indeed, we have heard that such was the case.—Ed. REVIEW.]

THE EFFECT SOMETIMES PRODUCED BY FEEDING IMMATURE, UNSOUND, AND MOULDY CORN TO EQUINES.

By L. C. Tiffany, V. S., Springfield, Ill.

Presented to the Annual Meeting of the Illinois State Veterinary Medical Association, Dec. 4-5, 1906.

The subject which I have chosen for this occasion is one that will doubtless give rise to much comment, for opinions will be expressed, the correctness of which may be difficult to substantiate, and which have already been declared wrong by some of our fellow practitioners eminent in the profession. It is not expected that anything new to many of our members will be brought out, except perhaps in the discussion which may follow, but many of the younger members of our Association will probably be interested.

The effect usually resulting from feeding unsound and mouldy corn to equines is observed in the centres of the nervous system, the brain principally, but sometimes in the cord as well. The feeding of immature corn is more likely to produce derangement of the digestive system, particularly so if the corn is quite immature and has been exposed to severe frost or freezing.

As instances of this condition are rather infrequent, only one instance of its most remarkable effect will be mentioned.

Several years ago, in the latter part of October, I was summoned to Fayette County to investigate the cause of death among horses on the farm of one Mr. C———. Being in another part of the state at the beginning of the trouble, I did not arrive at the farm until 3 P. M. on Monday, when the following facts and circumstances were related to me by the owner: On the Thursday prior to my visit Mr. C. was possessed of four horses, two of which constituted a team of about 2800 pounds weight, the other two being lighter bred, weighing about 1000 pounds each. The large team was used during Thursday haul-

ing light fire wood from the timber on the farm, and had not been worked hard nor had they been unusually warm. About six o'clock they were unhitched from the wagon, placed in the stable, the harness removed, and with the other two horses turned loose in the barn lot that they might go to the watering trough, where all drank freely. All the horses returned to the barn, entered their stalls, and were tied with halters. The owner then took a feeding basket and went to the corn crib preparatory to feeding their evening meal, but before either animal had received its feed, every one of them began to paw, scringe, and lie down. A neighbor being present immediately ran to the trough and emptied it, believing that the water contained poison. All these animals rapidly grew worse, and by midnight one of the large horses was dead; by daylight the mate was in the same condition, and by Friday afternoon one of the light horses was also dead and the remaining one yet seriously ill. The latter, however, finally recovered, and was seen by me on Monday.

Two local practitioners had been called to these cases and diagnosed poisoning. They held an autopsy on both the large horses, but the owner said they could discover nothing abnormal. The third carcass was left for my examination, but as the weather was quite warm, decomposition had rendered it unfit for such purposes. The owner described the symptoms, in all of which they were identical. Every animal had bloated intensely, with regurgitation of food in most of them, from which I could make no other diagnosis than acute indigestion. The animal which survived presented the appearance of one which had experienced the awful agony of that most painful ailment, being bruised at every angle of the head and body, from rolling on the ground. The remark of the owner convinced me that he believed that the water in the trough contained poison of some kind, but, as usual, the feed was examined and it was found that his corn, not nearly ripe, had been frozen in the field during the latter part of the month preceding (September), and of this corn he was feeding more than twice an

ordinary quantity to make up for loss in quality. The opinion was expressed that the immature corn was the cause of the trouble, although the admission was made that the coincidence was remarkable. My opinion was doubted and rejected by the owner, who said that he was feeding twenty ears at one feed of the same corn to a horse which he had borrowed from his uncle on Saturday. I warned him of the danger and came away. In about a week thereafter I met a veterinarian at a village near-by, who informed me that the uncle's horse died a few days after my visit, with the same symptoms displayed by the others, as told him by Mr. C.

Such cases as this must be extremely rare, and had the corn been fed in moderation the trouble would probably have been obviated, but it might be difficult to state what a moderate feed of such corn would be.

The effect of feeding unsound mouldy corn is often very serious in some parts of this state, in some seasons being a veritable enzoötic or epizoötic—at least, that is my opinion, formed after careful observation of many outbreaks. The effect produced in such cases being meningitis or cerebritis, with softening and breaking down of brain tissue in the latter. There is difficulty in forming a positive diagnosis in these cases, that is, it is difficult to be certain which pathological condition exists, but this seems rather unimportant as affecting any attempt at therapeutical treatment, as they are rapidly fatal in a great per cent. of all cases, and, in fact, our treatment would probably not be varied in the event of either diagnosis.

Symptoms.—As we are now considering the effect produced by error in feeding unsound corn, it would seem immaterial to attempt to differentiate between the symptoms of meningitis and cerebritis, as either may be present. In meningitis delirium is perhaps more marked in the early stage, while coma to a greater or less extent may mark cerebritis, but either or both symptoms may be seen in either condition. Amaurosis in one or both eyes is one of the distinguishing characteristics, in which amaurotic condition the patient, if allowed

freedom, will move in a circle if one eye only is affected. In this condition, with delirium, the affected animal roams about regardless of obstacles, stumbling over or running against anything in its way, often going through barbed wire fence or hedge, falling in ditches, etc.

When in a partially comatose condition the patient may assume very peculiar attitudes, sometimes standing with fore legs crossed, at others with head pressed against some object, as stall, fence or tree. Difficulty in locomotion is usually more apparent in fore limbs than the hind ones. The ears droop, the eyelids partially closed and the lower lip may be pendulous. Often the power of deglutition is partially or completely lost.

As a rule, I believe the body temperature is not much altered. The pulse in meningitis may be hard and rapid, in cerebritis soft and slow and respiration stertorous.

As these diseases advance the patient becomes exhausted by its movements or overcome by the progress of the affliction and falls to the ground, where convulsions may follow, with the head and neck drawn back; or, if the coma is complete, breathing becomes more and more stertorous until complete paralysis and death supervene.

Lesions found on post-mortem.—In meningitis the small bloodvessels are found engorged with redness of their walls and exudation of a red serum into the tissues and upon the involved surfaces, into the ventricles and subarachnoid space. In cerebritis areas of broken-down tissue in one or both hemispheres, an abscess is often discovered containing a yellowish white fluid. In cerebritis the surface of the brain may appear normal, but upon dissection the above-mentioned condition may be observed. In meningitis the cord may also be involved and similar lesions there observed as seen in the brain.

Treatment would seem to be useless except in the very earliest stage, when ability to swallow exists. Theoretically much might be done, but practically all effort is unavailing. A large aloetic purge may be given and abstraction of blood from the jugular would do no harm. If patient should survive sufficiently

long to permit of the action of the physic, stimulants and strychnine would be indicated, but if the patient is so fortunate as to have lived thus long recovery might be spontaneous. Preventive treatment, however, is of the most importance, and that treatment is obvious: *don't feed corn in such condition to horses.*

I am aware that the opinion here expressed that unsound mouldy corn is the cause of the serious enzoötics of cerebral disease in the horse is doubted by eminent pathologists of other states, but from my experience of a number of years, observing many outbreaks and thoroughly investigating all probable causes, am firmly convinced that my opinion is correct. Some eight or ten years ago this winter, in nearly all the counties bordering the Ohio River, there were hundreds and probably thousands of horses destroyed by meningitis or cerebritis, and in every outbreak investigated by me, in every instance, the horses had been fed unsound or mouldy corn. If the condition of the corn is not responsible for these troubles it certainly is a most remarkable coincidence. In all the outbreaks observed since that time, and many have been serious ones, the same conditions were found. All unsound or mouldy corn may possibly not be injurious, but in all cases investigated that kind of corn had been fed. Only a few days ago I had opportunity to investigate a case of cerebritis in the southern part of the state—White County. A stockman had nine head of coming two-year-old colts running with about twenty head of young mules. All went well until he began feeding corn, when the colts began to die. Six of them were lost upon my arrival and an autopsy was held upon one which had died about an hour before. A large abscess was found in the right hemisphere. Fortunately the owner had only begun the use of the corn and he had fed sparingly. The colts drove the mules away from the feeding place, so that the latter were deprived to a great extent and the colts got most of the corn. Not a single mule was affected, which fact should be, at least, negative evidence tending to prove the cause of the trouble to be the corn, which was unsound and mouldy. Much corn that has a good appearance in

the ear, upon being shelled shows a mould upon the cob, and this I have found dangerous when fed to horses. Many feeders knowing the condition of their corn attempt to select the good ears, but many bad ears are liable to be overlooked; such corn, however, seems harmless to cattle and hogs.

THE "NEVERSLIP" CALK COMPANY has organized a $2,000,000 trust and offers to shoe horses at cut rates.

"RHEUMATISM" AND ITS TREATMENT.—Walter concludes his article on rheumatism, in the *Medical Record* for Jan. 19, in saying that the various infections will account for every form of so called "rheumatism" except muscular, and that is an intoxication. This intoxication accompanies or precedes most articular and some nerve infections. The term "rheumatism" is a misnomer, but must be retained for a time, until real facts are appreciated by the profession and laity. Better diagnosis will bring intelligent treatment. Intelligent treatment means the use of combined methods and a thorough working knowledge of the case. This should consist of prophylaxis, better understanding between patient and physician, with attention in the main to social conditions, dietetics, exercise or rest, as indicated, elimination by proper baths, fresh air, the right coöperative mental attitude, and in some cases climate. Autointoxication with faulty elimination is directly responsible for these conditions. That it is necessary for physicians to make a greater study of the toxic effects of leukomains and to lay more on the findings in the urine of the products of indigestion. An examination of the urine is important in every case for these products of metabolism as well as albumin, casts, and sugar. Heredity has no effect except as establishing social conditions followed by the family. The importance of baths and the precedence of hot mud packs over other baths for equalizing the circulation, stimulation of glandular activity, and elimination. The avoidance of a sedentary life and also of great muscular fatigue, the latter being a cause of muscle pains in children and workingmen. Alkaline waters and drugs hold a large place as anti-acids and antiseptics to the intestines, though they are greatly abused. Hot baths must not be given in dilated hearts, high blood pressure, arteriosclerosis, tuberculosis, and great emaciation, though they are indicated in autointoxication without such complications.

MODERN VETERINARY METHODS.*

By Walter J. Taylor, D. V. M., Ithaca, N. Y.

DIFFERENTIAL DIAGNOSIS.

RABIES.

Rabies is an acute infectious disease transmitted from animal to animal or from animal to man by the bite of the rabid individual or by direct inoculation. It is not known to be transmitted in any other way. The dog is the animal most commonly affected. All warm blooded animals are said to be susceptible. It is a serious disease in man, cattle, horses, sheep and swine. The natural tendency of the dog toward biting is explanatory for its greater frequency in the canine species. Nearly if not all cases of rabies in other species are traceable to inoculation through the bite of a rabid dog.

Rabies was described by Aristotle in the fourth century B. C. Cornelius Celsius in the first part of the Christian era seems to have been the first to refer to human rabies and to employ the term "hydrophobia." During the latter part of the eighteenth and the beginning of the nineteenth century the disease extended over Europe and about this time it appeared in America. The first outbreak in this country was reported from Boston in 1768. In 1779 it appeared in Philadelphia and in the state of Maryland. From that time on it has gradually extended over the greater part of the United States and during the last century has caused heavy losses among farm animals in America.

Although rabies has become recognized as a specific infectious disease, its primary etiological factor has not been isolated or found. It is known that it exists in the brain, spinal cord and saliva of the affected animal. Various forms of bacteria and blastomyces have been found in the brain and cord of affected animals by a number of investigators, but their results have not been confirmed by others.

In 1903, Negri, of the University of Pavia, described small bodies or cell inclusions, since called Negri bodies, which he found in the Purkingie cells of the cerebellum and in the large ganglion cells of the Ammon's horn. Negri believed these bodies to be the etiological factor of the disease and classified

*This series of articles was begun in the December Review, the first installment being on "Diagnosis;" that for January treated of "Differential Diagnosis," with "Tuberculosis" as the special subject, while "Glanders" constituted the special subject for the February number.—[Editor.]

them among the protozoa. These bodies appear early in the course of the disease. They occur in varying numbers and attain to a greater size as the disease progresses. They are largest and most numerous at the time of death caused by the disease.

Symptoms.—Rabies is generally divided into two forms, furious and dumb.

Furious Rabies.—In this form the animal becomes irritable, the symptoms appearing gradually. His habits and behavior are changed. He may be more restless and affectionate than usual, seeking to be near master or mistress, fawning, licking the hand or face, apparently seeking sympathy and assistance. Such cases are, however, extremely dangerous, due to a possibility of infection through the virulent saliva.

In most cases dogs first become dull, gloomy, morose, seeking solitude and isolation in out-of-the-way places or retiring under pieces of furniture. But in their retirement they cannot rest, they are uneasy and agitated, they lie down assuming an attitude of repose, but in a few minutes are up walking about "seeking rest, but finding none." At this period dogs may have aberrations of the senses which cause hallucinations. They crouch ready to spring upon an imaginary enemy, they rush forward and snap at the air; they throw themselves, howling and furious, against the wall as though they heard sounds behind it.

When the furious symptoms appear the dog may leave his home and start upon a long chase with no apparent object in view other than to be traveling. He trots at a rapid pace, eyes haggard and tail depressed. He is indifferent to his surroundings. He often flies at and bites persons or animals which he meets, but usually does not notice them if they remain quiet. It is possible that many so-called spontaneous outbreaks of rabies arise in this way. The rabid dog bites some other dog met in the street late at night, then passes on unseen by any human eye. Dogs in this condition may travel many miles and finally drop from exhaustion. After an absence of a day or two he may return to his home exhausted and emaciated, presenting a most forlorn and miserable appearance.

As death approaches the animal becomes more and more exhausted and unable to stand. The expression is that of pain and despair, the eyes being dull and sunken. Paralysis may appear in the jaws, gradually extending over the whole body. He lies flat upon the side, respirations becoming more and

more difficult. There are spasmodic contractions of certain groups of muscles, complete prostration and finally death.

It is interesting to note that bull dogs and hounds are especially subject to this type, while house and pet dogs more often suffer from the dumb form.

Dumb Rabies.—In dumb or paralytic rabies the striking characteristic is the absence of the preliminary furious stage and the disease merges at once into paralysis after the premonitory symptoms. The early symptoms in this form tend to prostration. There is weakness, dullness or stupor; paralysis of the masseters and abundant driveling of saliva. From this the paralysis may extend to a limb. Often a limb is first affected, the paralysis spreading to the trunk, then to the head. The tongue hangs out, flaccid and dry. The buccal mucosa is dark colored, dry and powdery. The eyes are dull, mournful and without expression, the pupils being usually dilated. The prostration is extreme, the patient lies quiet and helpless until relieved by death in from two to four days. Dumb rabies and furious rabies do not always represent two distinct types of the disease. The typical cases are seen in the two extremes of symptoms and there are always gradations between them.

Differential Diagnosis.

The early symptoms of rabies in the dog are of supreme importance in enabling the owner to destroy or seclude the dangerous animal before he has developed the disposition to bite and thus propagate the disease. The first consideration is to ascertain the possibility of the dog having been bitten by another dog which might have been suffering from rabies. Any change in the general habit should be carefully noted. If so a careful consideration of the symptoms already referred to is imperative. Failing in a positive diagnosis, under suspicious symptoms, several specific means of a certain diagnosis are available. Each of these, however, necessitate the destruction of the animal.

Three methods of an accurate diagnosis are now so nearly perfected that results are most gratifying:

1. Animal inoculation.
2. The histological examination of the brain and nervous tissue.
3. The finding of the Negri bodies in the nerve cells.

Animal Inoculation.—This consists in the subdural inoculation of rabbits or guinea-pigs with a suspension of the brain

or spinal cord of the suspected animal. The procedure is simple. The brain of the suspected animal is removed with aseptic precautions as soon as possible after death. A small piece of the brain or spinal cord is placed in a sterile mortar and finely ground with a few cubic centimetres of sterile water or bouillon. This forms the suspension to be injected.

The hands of the operator and all instruments are carefully disinfected. The rabbit is etherized, the hair clipped from between the eyes and ears, and the skin thoroughly washed and disinfected. A longitudinal incision is then made through the skin and subcutaneous tissue which are held back by means of a speculum. A crucial incision is made in the periosteum on one side of the median line, to avoid hæmorrhage from the longitudinal sinus, and the four parts of the periosteum reflected or pushed back. By the aid of a trephine a small button of bone is easily removed, leaving the dura mater exposed. With a hypodermic syringe a drop or more of the rabid brain suspension is injected beneath the dura, the periosteum is replaced, the skin carefully sutured and disinfected, and the animal returned to its cage.

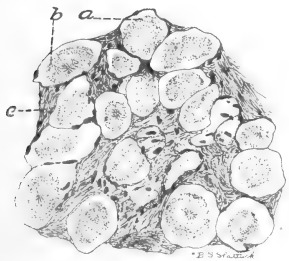
The symptoms following the inoculation are quite uniform. Usually the first indication of the disease is a partial paralysis of one or both hind limbs. This gradually advances until the rabbit is completely prostrated, the only evidence of life being a slight respiratory movement. The period of this complete paralysis varies from a few hours to a few days, but ordinarily it does not exceed twenty-four hours. Although these animals are unable to move voluntarily, there is a reflex action of the limbs until a very short time before death.

Diagnosis by Histological Examination.—The plexiform ganglion situated just outside the cranial cavity near the *foramen lacerum basis cranii*, on the pneumogastric nerve, has been found the most convenient and most desirable for study. The removal of this ganglion is comparatively simple and easy. By taking up the pneumogastric nerve and tracing it anteriorly to a point where it enters the cranium, a slight enlargement will be found, which is the ganglion. Failing in this, by taking up the lingual nerve and tracing it to the point where it enters the cranium in company with the vagus, the plexiform ganglion is easily discernable.

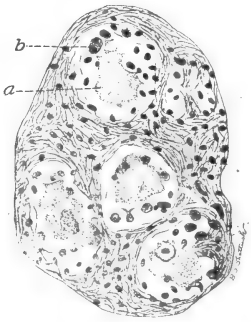
After the ganglion is removed there are a variety of methods which may be used to fix and stain the specimen. The following has been found to be very satisfactory: As soon as the gan-

glion is removed it is placed in Flemming's fluid or in a saturated aqueous solution of mercuric chloride for a few hours, washed in water, carried through the alcohols and sectioned by the paraffin method. With this method of fixation it may be stained with either iron or Delafield's hematoxylin, the latter being the more satisfactory.

Normally this ganglion is composed of a fibrous capsule from which a supporting fibrous tissue extends into the interior, holding in its meshes the nerve cells, each of which is enclosed in an endothelial capsule. The changes characteristic of rabies consist in the atrophy, the invasion and the destruction of the ganglion cells as a result of new formed cells, evidently from the endothelial capsule. These cells appear first between the



Section of a normal plexiform ganglion; (a) and (b) ganglion cells, (c) intercellular substance.



Section of plexiform ganglion from a case of rabies; (a) ganglion cell, (b) cells infiltrating the ganglion cell and space.

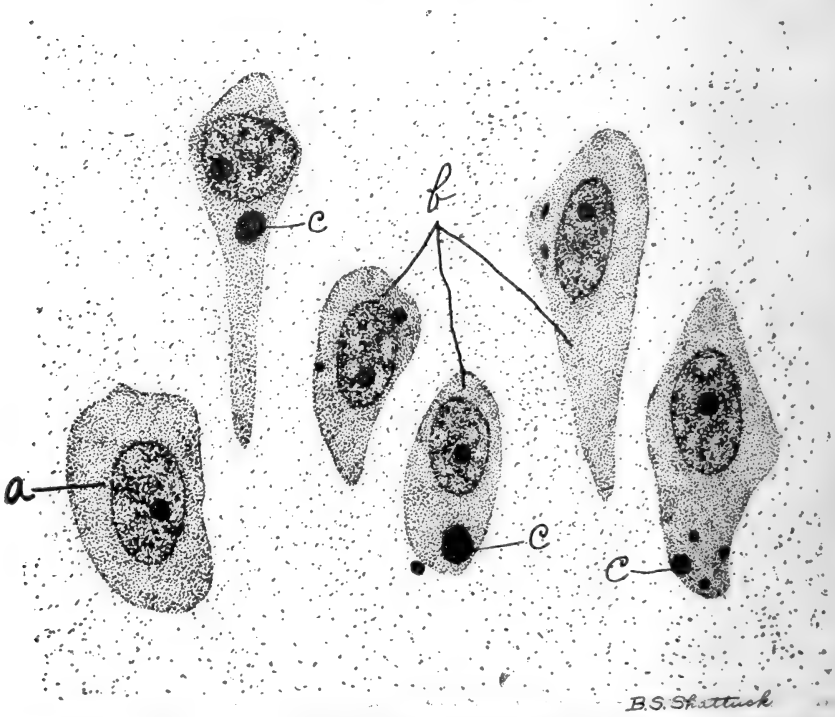
nerve cell and its capsule. These changes are quite uniform through the entire ganglion, and in advanced cases of the disease nearly all of the nerve cells are oftentimes destroyed. The accompanying figures show the difference in the normal and the diseased ganglion cells.

Finding the Negri Bodies.—These are most easily found in the large ganglionic cells of the hippocampus or Ammon's horn of the brain. After the brain is carefully removed it is divided into two halves on a line corresponding to the great longitudinal fissure. This gives ready access to the lateral ventricles of the brain.

The hippocampus or Cornu Ammonis occupies the floor of the anterior part of the lateral ventricles. It is prolonged posteriorly through the reflected portion of the ventricle, the backward curvature of which it exactly follows.

Carefully dissect the hippocampus away from the floor of the ventricle. A transverse section will reveal a thin layer of gray matter folded upon itself somewhat in the shape of an interrogation point. This layer of gray matter is covered on both sides by white matter. With a pair of fine-pointed sharp scissors a little of the gray matter may be cut out and placed on a glass slide. By pressing firmly down upon it with a cover-glass and drawing the cover-glass off the slide at one end, a smear may be made which some workers use altogether in diagnosis. This method has been found very satisfactory where the Negri bodies are present in large numbers. When they are few in number, the paraffin method gives the best results.

The Paraffin Section Method is as follows: A piece of the hippocampus about one centimetre in length is placed in Zenker's fluid. The piece should be allowed to fix for about four hours in an incubator at a temperature of about 40° C. If at



Ganglionic cells found in Ammon's horn of brain from a rabid dog; (a) normal cell, (b) cells showing the presence of (c), Negri bodies. Greatly magnified.

room temperature, 12 to 24 hours are necessary. Wash in running water 6 to 12 hours. Place in 67 per cent. alcohol four hours, 82 per cent. four hours, 95 per cent. four hours, absolute two hours. Clear in cedar wood oil 3 to 4 hours, infiltrate in soft paraffin at 50° C. 2 to 3 hours. (These steps are carried out in an incubator at 50° C. If at room temperature a much longer time is necessary.) The tissue is now embedded in hard paraffin, and cut with the microtome. Sections cut about 8 μ thick give the best results. The sections may now be mounted on slides, treated with albumin fixative, in 67 per cent. alcohol, which dries almost immediately.

Staining.—Smears or sections should be perfectly dry and firmly fixed to the slide. After removing the paraffin from sections by benzine and treating with 95 per cent. alcohol, the slide is immersed in a saturated alcoholic solution of eosin, and allowed to stain 25 to 30 minutes. (Smears may be stained as soon as dry.) They are then washed quickly in tap water, immersed in Loeffler's alkaline methylene blue 60 to 75 seconds, dehydrated in absolute alcohol, cleared in xylene and mounted in balsam. In preparations stained in this manner, the Negri bodies appear as bright red bodies containing one or two circular refractive structures which are surrounded by a number of other small, circular, regular bodies. Inasmuch as these bodies appear very early in the course of the disease, they offer a very ready means of diagnosis in case one has had the misfortune to have become inoculated with the virus of rabies. This method also serves a very efficient purpose in checking an epizoötic because of the early appearance of the Negri bodies. The early sacrifice of a suspected animal, therefore, is not to be considered in clearing up a doubtful diagnosis.

(*To be continued.*)

DR. R. D. SCURFIELD (McK. '01), Crystal City, Manitoba, died of hepatic cirrhosis, Nov. 29.

DR. W. H. DALRYMPLE, of the Louisiana State University and Experiment Station, has suffered a sad bereavement in the death of his venerable mother, which occurred in the city of Durham, England, on January 12, in her ninety-second year. Although she had arrived at extreme old age, she kept up a lengthy weekly correspondence with her only living child, who thus feels his loss more acutely than is usually the case when two are separated by so many miles. She had lived under the reigns of the last two Georges, Victoria and Edward VII.

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."

EPITHELIOMA CONTAGIOSUM.

By A. T. KINSLEY, M. Sc., D. V. S., Kansas City, Mo.

The following cases of epithelioma contagiosum have been observed in the vicinity of Kansas City in the last two years.

In September, 1904, a mature barred Plymouth Rock rooster, and later 12 six-weeks-old chickens of the same coop were reported to be affected with this disease. These chickens were kept in an enclosure in a suburb of Kansas City. The surroundings were in an excellent sanitary condition, their food and water were of the best quality and wholesome.

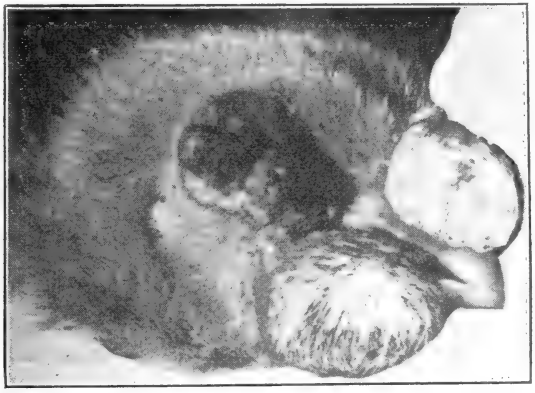
The affected birds assumed a constant sitting posture. Their feathers were ruffled. Their appetite was normal. There was a thin watery discharge from the eyes and nose, becoming muco-purulent as the disease advanced. There was ulceration of the conjunctiva, succeeded by an hyperplasia or by granulation. The hyperplastic or granulation tissue developed rapidly, in some cases becoming as large as a hazel nut in three or four days. The conjunctiva lining the eyelids was most frequently affected and usually caused eversion of the lid. When the corneal conjunctiva was affected the growth invariably invaded the eye, destroying and replacing the aqueous humor, iris, crystalline lens and the vitreous body. In some cases the suborbital fossa contained a mass of muco-purulent material that became caseous as the disease progressed.

Two or three days after the ulceration of the conjunctiva was observed hyperæmic areas appeared in the skin surrounding the eye, which frequently extended to and involved the ears, comb and wattles. The hyperæmic cutaneous areas became hyperplastic, and in four to seven days they became necrotic, which in some cases sloughed, leaving a ragged brownish or grayish indurated surface; in other cases the necrosed tissue accumulated as scaly masses. The hyperplastic or necrotic areas were surrounded by an hyperæmic zone. The above anatomical changes were those most frequently observed, but in some cases the nasal and buccal mucous membranes were involved, resulting in hyperplasia and necrosis, as in the cases in

which the eye only was affected. See Cut I. The rooster and seven of the chickens died of the disease. The other five chickens recovered in about six weeks from the time the disease appeared in the coop.

In November, 1904, the disease was observed in a coop of chickens in Argentine, Kansas. There were 6 or 7 six-weeks-old chickens affected in this coop, the mature birds apparently suffering no inconvenience. Their surroundings and food were conducive to health. The disease affected the eyes and skin only in all the cases in this coop, the condition produced being identical to that described above. All of the affected chickens died.

Cut II represents a six-weeks-old chicken from a coop of chickens affected with this disease. The chickens run at large

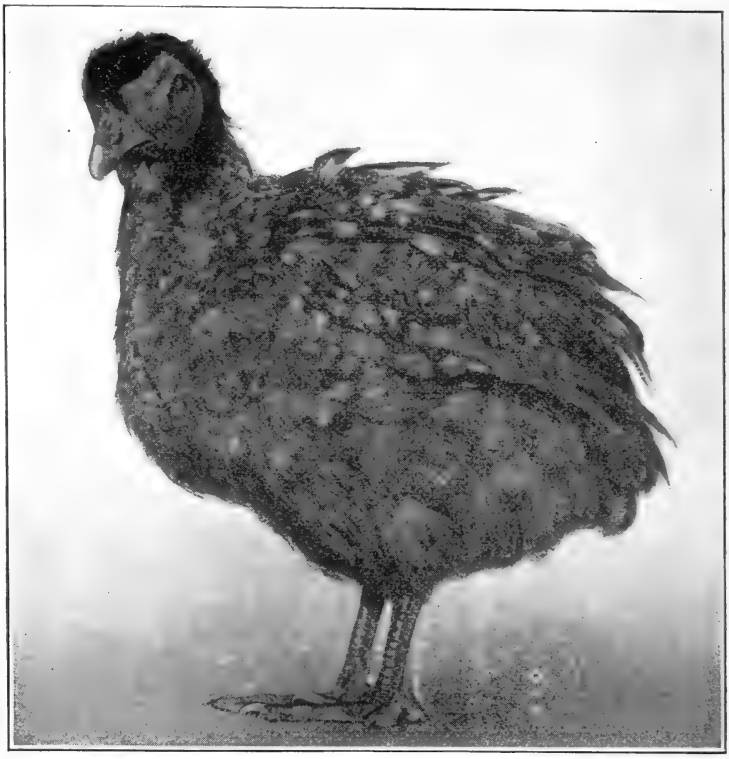


CUT I.—Right side, showing growth from eye, nasal cleft, and mouth.

during the day in a tenement district in Kansas City, and were kept in a filthy make-shift coop at night. Their food consisted of garbage and whatever else they obtained in their daily wanderings. There were 16 six-weeks-old chickens in this lot, eleven of which were diseased. The disease affected the eyes and the surrounding skin primarily, the nasal mucous membrane being only slightly affected in three or four cases. Three of the diseased chickens were so extensively involved that they died in a short time. Two of them lingered along for two weeks and then died. The other six diseased ones were only slightly affected and they made a complete recovery. Those not dis-

eased were placed in clean quarters and fed on wholesome food and escaped the disease entirely.

An outbreak occurred in a coop of 75 Barred Plymouth Rock chickens that were kept in excellent quarters and fed on the best of food. There were 20 affected in all. The symptoms and anatomical changes were the same as described above. The infection involved the eye most frequently. The diseased ones all recovered except two.

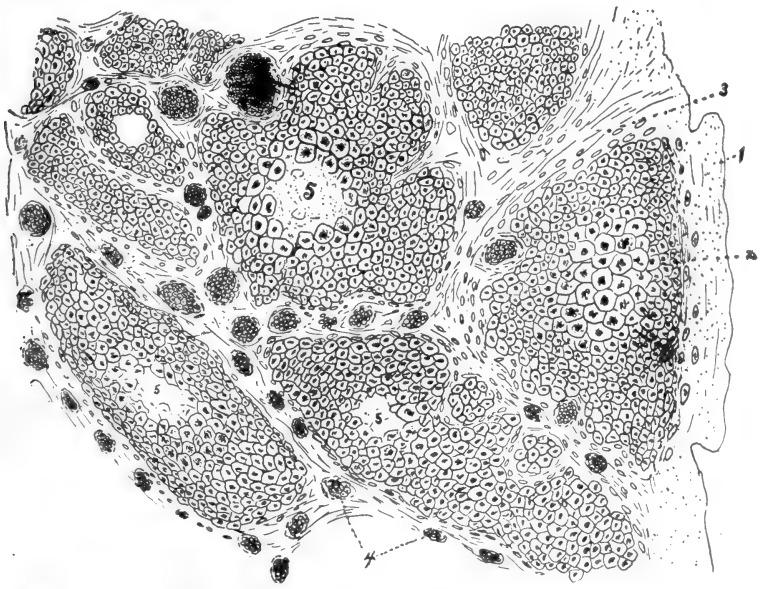


CUT II.—Showing new growth which had completely replaced the left eye and invaded the surrounding tissue. The central portion of the growth had become necrotic, sloughed and left a depression as shown in cut. Ruffled feathers representing general depression.

Another outbreak occurred in a coop of Orphington chickens. The disease affected some of the chickens in the summer of 1905. In November, 1906, twenty chickens of this same coop were affected with the same malady, three of which died. These chickens were kept in clean quarters and fed wholesome food.

The symptoms and gross pathological lesions were the same as those described in the other outbreaks. Cut IV is a pen drawing of a section of one of the skin growths of a six-months-old cockeral from this coop.

Microscopic examinations of the diseased tissue from several cases have been carefully made. The tissues have been fixed in formalin and alcohol and embedded in collodion. Various stains have been used in staining the sections, as hematoxylin followed by picric acid, eosin, or picro-fuchsin, etc. The hyper-

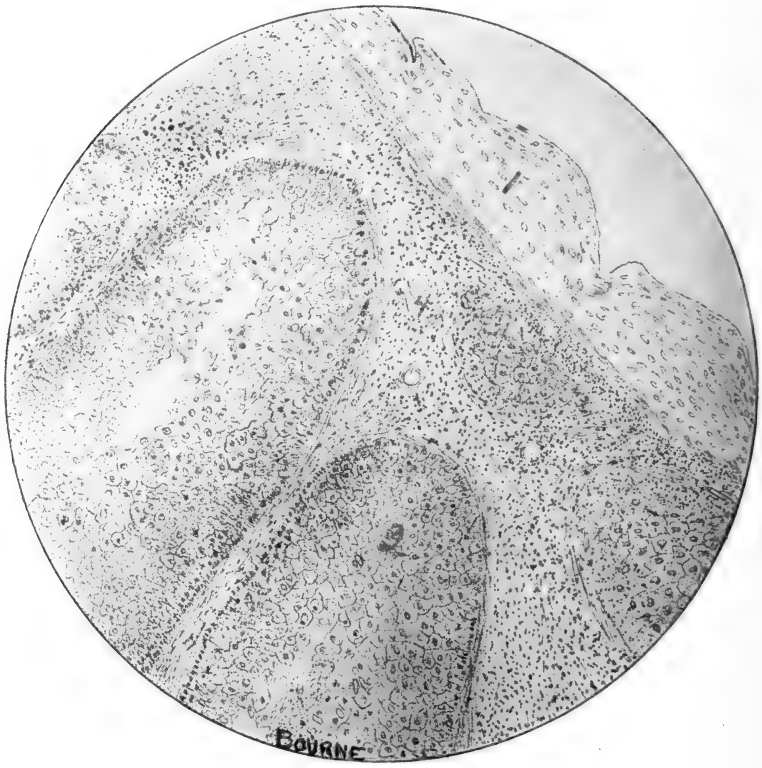


CUT III.—Pen drawing of growth from nasal mucous membrane × 350.
1. Surface of growth.
2. Area of epithelial cells; cells large in centre, becoming smaller and finally blending with 3.
3. Apparently connecting tissue undergoing mucoid degeneration.
4. Probably bloodvessels, the contained cells having a rod or oval-shaped nucleus, but the cells are smaller than normal red blood cells of the chicken. The cells are also quite irregular in shape.
5. Degeneration of central cells. The nucleus of the cell first disintegrates, and finally the cell body.

plastic tissue from the conjunctiva, nasal mucous membrane, buccal mucous membrane, or skin, is composed of nests of epithelial cells supported by irregular bands of connective tissue in which there is a limited blood supply. The cells are typical of cutaneous epithelium having a well-defined cell membrane, usually a nucleus with a nucleolus, and an oval or spherical body that stains yellow with picro-fuchsin and thought to be a

coccidium by some authorities. The cell nests may develop from glandular epithelium, subsurface epithelial nests, or more probably from surface epithelium, which in the attempt to repair the eroded surface becomes entangled in the ragged edges of the ulcers and develop as an epithelioma.

The nests increase in size by a multiplication of the peripheral epithelial cells. The rapidly multiplying marginal cells consume practically all the nutriment at the expense of the central cells, and as a result there is a cellular necrosis in the centre of the nests. The necrosis extends rapidly, destroying the cell nests and ultimately the entire growth. See Cut III and IV. Sections of the necrotic masses were composed of amorphous substances, there being some indication of cell nests and an occasional epithelial cell.



CUT IV.—Pen drawing of skin-growth × 350.
1. Skin surface.
2. Epithelial cell nest.
3. Necrotic area in centre of cell nest.
4. Supporting connective tissue.

It is rather difficult to clearly differentiate this disease from chicken diphtheria, roup, etc., for the cause is unknown in all these diseases. It is possible that all three diseases are the result of the same cause acting upon the different tissues or having a varied virulence.

In these cases reported the cause appeared to be transmissible, for frequently chickens in other coops in the same vicinity were affected. The prognosis is unfavorable if no treatment is applied. The disease is not difficult to control, as it responds readily to the free use of any reliable disinfectant, as 2 to 3 per cent. solutions of creolin, eucamphol, phenol, etc. We have obtained good results with Lugol's solution.

ANÆSTALGENE AS A LOCAL ANÆSTHETIC.

By L. McLEAN, M. R. C. V. S., and R. A. McAUSLIN, D. V. S., Brooklyn, N. Y.

Case I.—Fox terrier whose tibia was crushed while fighting with a larger dog; operated on five days after accident. Used 1 c.c. of Anæstalgene hypodermically, which produced perfect local anæsthesia throughout the amputation of leg, no ligature nor Esmarch bandage being used. Wound healed by first intentions, the styptic qualities of the anæsthetic being pronounced. There was no excitability of patient whatever.

Case II.—Grey gelding, admitted to hospital having large fibroid tumor on point of shoulder. Used 1 dram of anæstalgene in three different places. After dissecting to the back of tumor, found slight sensibility and then sprayed 1 c.c. into back part of wound, which produced perfect anæsthesia throughout the operation. No means of restraint were used on this horse whatever. Wound healed rapidly; no excitability.

Case III.—Bay mare, admitted to hospital suffering from empyema of superior maxillary sinus. Used one dram of anæstalgene hypodermically. Trephined into sinus, and cleaned same of all pus. In this case the anæsthesia was perfect; also no restraint of animal was necessary, and no excitability.

Case IV.—Black French poodle, admitted to hospital with large malignant growth on claw, which involved the bone. Anæstalgene, 1 dram, was used hypodermically, and the wound was sprayed while operating, owing to disarticulating the bone in centre of foot. Wound healed by first intention, the anæsthesia being complete throughout, without any excitability.

Have also operated on dogs' ears where anæstalgene was used, with perfect anæsthesia, and practically no hæmorrhage.

NAVEL INFECTION IN A FOAL.

By F. H. McNair, D. V. M., Mount Morris, N. Y.

I was called to see a 10-day-old sucking colt which presented the same symptoms as had three others in preceding years. Owner thought he was using extra precautions by keeping mares for a few days before foaling time and for two weeks after in a large basement box stall with dirt floor. Although the stall was well bedded, yet with the clay bottom there was considerable moisture present from the urine and natural dampness of the soil. This, together with very little light, made an ideal breeding place for bacteria.

Symptoms.—Anorexia, temperature 105°, and an abscess size of a goose egg on one fore leg just above fetlock. Umbilicus was closed and apparently healthy, but from the history and symptoms diagnosed it as navel infection and gave unfavorable prognosis. Opened abscess, when considerable cream-like pus was discharged. Syringed wound well with 3 per cent. creolin solution and prescribed 10 grs. each of quinine and potassium iodide internally every 3 hours. Next day another abscess formed just above fetlock on right hind leg, and temperature 105.5° F. Opened this abscess and continued same treatment. Third day abscess on right fore leg at stifle joint; temperature 106. Opened and proceeded as before. Fourth day colt died.

Post-Mortem.—Found umbilical vein filled with cream like pus and extending well into liver. Ante-mortem blood clot two inches long in right auricle and ante-mortem clot three inches long in right carotid artery. Abscess of one left iliac lymph gland.

The infection was probably from *B. coli communis*, but had laboratory facilities been at hand it would have been interesting to definitely determine that point.

Owner was advised to keep future colts out of that stall and for the two years since the above case has had no such trouble.

TWO CASES WHICH RESPONDED TO MILK FEVER TREATMENT.

By G. E. Corwin, Jr., D. V. S., Canaan, Conn.

No. 1.—Symptoms and History:—Recumbent position and unable to rise, temperature 98° F.; calved seventy (70) days previous: giving twenty (20) quarts of milk per day; was apparently healthy until found down; in good condition and had been on pasture for a month with no other food. She was not

comatose, rectum filled with hard fæcal matter, but owner was sure her bowels were all right the day before. Treatment: Sterilized air injected into udder and hypodermic injection of strychnia et digitaline. Recovered in three hours and ate bran mash; no further treatment and all functions became normal.

No. 2.—Large grade Holstein; calved ten (10) days previous; was led to water and drank about two pails (cold); while she was being led back, it was noticed that she acted stiff behind. I was called and found her standing, temperature, respiration and pulse normal, and standing quiet, but when made to move, acted a little stiff behind. I made no positive diagnosis, but gave her a drench of quinine ʒ ss (dissolved in acid); tinct. gentianæ comp., ʒ ij; tinct. capsici ʒ ij; spts. nitre q. s. ʒ v. Thought her trouble might be due to drinking cold water. Immediately after giving the drench she regurgitated and commenced to ruminate.

I heard from the owner next morning, and he said she was apparently all right, but that her appetite wasn't very good. I called again and found her acting bright, with normal functions; left tinct. gentianæ comp. et strychnia to be given twice daily.

Three days later the owner called me again. When I arrived, I found her down on her knees and standing behind; she had been in this position for about three hours and wouldn't move. She had eaten a bran mash in the morning and all the functions were normal. I did not make a positive diagnosis, but told owner I thought she was trying to have milk fever and consequently treated her accordingly. Sterilized air injection into udder, hypodermic injection of strychnia et digitaline. Heard next day that she was as well as ever, and has had no further trouble.

LAVAGE OF THE LUNGS.

By F. H. McNair, D. V. M., Mount Morris, N. Y.

A cow in an advanced stage of parturient paresis. Gave a hypodermic of 1 gr. of strychnine and applied air treatment. The next morning, as patient seemed entirely recovered but was badly constipated, a large dose of epsom salts, about 1½ pounds, with ½ pound of common salt, was administered. She choked on the last bottleful of the drench and was immediately seized with severe dyspnœa. As owner stood by and understood the situation, perfect frankness with him was the only course to

follow. Told him my warning not to allow cow to eat or drink a thing during the acute stage was necessary because of paralyzed condition of throat, but as this symptom seemed to have passed away I had ventured to drench her, with the result noted. The more than saturated solution of salts was of course very irritating to the lungs and inhalation pneumonia was feared. It seemed a case where desperate measures should be used. Tracheotomy was performed and a sterile rubber tube inserted into trachea and about 3 quarts of sterilized water poured down. Dyspnœa was severe for a time, but the solution was gradually absorbed and cow made a good recovery in a few days.

Will some one inform me whether or not when oil has accidentally gotten on the lungs it could be discharged by filling the bronchi several times with sterile water poured through a trachea tube and thus avoid inhalation pneumonia?

WHAT CONSTITUTES OMASUM IMPACTION?

By F. H. McNair, D. V. M., Mount Morris, N. Y.

Having lost several cows apparently with impaction of the third stomach, the query arises: what constitutes impaction of the omasum? Of course we know that food normally appears rather hard and dry in this stomach, but when an animal has eaten nothing for four or five days before death and post-mortem examination reveals a mass of food in the omasum, it would seem sufficient proof of impaction.

The great Hackney show mare "Hildred," with her mate "Plymouth Champion," owned by Eben B. Jordan, of Boston, were recently sold to Miss Emily Bedford, of Brooklyn, N. Y., who will enter them in many of the Eastern shows during the year. The price is not stated, but it is known that Mr. Jordan refused $20,000 for "Hildred" alone.

The Georgia State Veterinary Association, recently organized, has sixteen active and four honorary members. Its December meeting was full of energy, and it is striking at the foundation for the advancement of the profession in that state, having bills already prepared for the coming meeting of the General Assembly creating the office of State Veterinarian and an examining board to govern the proposed practice act. The report of their meeting, printed elsewhere, has the right ring, and with the spirit displayed the members may be congratulated in advance on their success.

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

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

TORSION OF THE BLADDER IN A DOG [*M. Griveaux*].—An aged King Charles bitch has been making violent efforts to micturate without results. Her general condition is rather serious. She is unable to make water, and all her straining has for result the discharge of a little soft fæcal matter, which soils the tail and the legs. The animal is very thirsty, the nose is dry and hot, conjunctivæ are congested and the pulse quick and small. Exploration of the abdomen shows that it is distended and the skin is very much congested. Trying to introduce a catheter, it is soon arrested and the introduction of the finger into the rectum fails to reveal the nature of the obstacle which arrests the catheter, but at that time the dog manifests a violent pain, which is such that further examination is suspended. To try to give temporary relief the bladder is punctured through the rectum and a glass of urine is extracted. The next day the animal is chloroformed. At the post-mortem the bladder is found extremely distended. Pushed out of the pelvic cavity, it is found completely twisted on itself, dark and softened by hæmorrhagic exudates. The walls were inflamed and on the point of bursting.—*(Jour. of Zoötech., 1906.)*

PROLAPSUS OF THE RECTUM FOLLOWED BY DEATH OF A HORSE SECURED IN THE DECUBITAL POSITION [*MM. Cazaux and Lasserre, Students*].—This stallion had for two years and was to be fired for articular and tendonous windgalls of the four extremities. After all the necessary precautions about diet, even several days before operation, the animal was cast, properly secured and operated. All went well until towards the end; suddenly the horse struggled violently, and all at once the rectum came out for a length, not less than seventy centimetres of the organ protruding. This was reduced immediately and the operation concluded without any more trouble. The horse was carefully watched, and seemed at first quiet and comfortable; but this condition did not last, and he soon showed abdominal pains, which gradually assumed an ugly character until, notwithstanding the best care, the animal died forty-eight hours after the accident. Autopsy: Small mesentery and float-

ing colon congested; rectum healthy; peritoneum contains two litres of bloody exudation. In the large colon, there is an accumulation of hard, dry fæces, true balls about as big as the fist. Two are as large as a man's head, one is arrested at the diaphragmatic and the other at the pelvic curvature. The stomach is empty and the small colon contains soft fæces. The other organs are healthy. The presence of the hard fæcal mass explains the irritation produced on the intestine and promoted the prolapsus.—(*Revue Veter., 1906.*)

Encephalitis Following a Fall [*M. Joyeux*].—After a severe fall, in which a mare had required some time before being able to rise, she was brought to her stall, where during three days she exhibited a series of symptoms which can be resumed as follows: In standing up, she carries the head low down, the neck resting on the manger. When walking, locomotion is in circle, either to the right or to the left, but principally to the left. When lying down, she is stretched and looks as if she was dead. This condition lasted for three days, when she showed undoubted symptoms of photophobia; she is afraid of the light from a lantern. Then her condition is such that she is put out of the way, with a few inhalations of chloroform. On post-mortem, numerous ecchymotic spots are found on the body. The mucous membrane of the nasal cavities, of the turbinated bones and of the ethmoid are full of blood. On opening the cranium, the left lobe of the brain is found intact, the right has its surface covered with blood. Above the ventricle and in its external half, the brain substance is crushed into a mush. There is a little citrine liquid in the cavities of the ventricles. Nothing in the cerebellum. There is a fracture of the basilar process, without displacement.—(*Revue Veter., 1906.*)

A Case of Medullary Paraplegia with Syringomyelic Lesions, in the Horse [*Mr. Lefebure*].—This mare is eight years old, in good health, when having walked some eight miles, she shows stiffness behind, with slight lameness on the left hind leg. There is no muscular swelling on the croup. Called at once, the author gives a diagnosis of threatening paraplegia with serious prognosis. Appropriate treatment is immediately applied, and with much difficulty the mare is taken home. When she arrives, she micturates and her urine is free from any coloration. Soon she begins to tremble on her hind legs, and, notwithstanding the greatest efforts, she drops down and is unable to stand. Made to get up, she does it with the utmost difficulty, remains standing but a short time, and soon drops. At first she

lies down quietly, but after a while she begins to struggle and in a short time she is taken with violent spasms, which are such that the owner orders her to be killed. Post-mortem: Connective and muscular tissues are normal; muscles, especially the psoas, firm but of a red rutilant color. Nothing in the chest or the abdomen. Spleen and liver as well as the kidneys are apparently healthy. One of the kidneys contains a little pus. Bladder empty. It is in the spinal cord that the lesions are to be found. Some vascularisation of the membranes. The spinal cord stretched on a table, an incision is made alongside the left lateral fasciculus on a level with the lumbar bulb and a cavity is exposed. This cavity is elongated, in form of a tunnel, and extends from the third lumbar vertebra to the first third of the sacrum. It has a diameter measuring about one centimetre. The walls are formed of white substance and covered by a thin layer of grey matter. Another incision made on the other fasciculus, on the right side, shows the same lesion to exist, but extending less forward and backward than the other; it is otherwise identical with it. Both cavities are independent of the ependymar canal. The white matter of the cord seems macroscopically intact; the grey matter is destroyed and softened into a pulp adherent to the wall. This pulp, examined under the microscope, shows, after coloration with the blue of methylene, stared cells, leucocytes, red corpuscles and staphylococci. Cultures of the pulp on gelose gave colonies of staphylococci. The pus found in the left kidney contained the same microbes, which were also detected in the blood. However, the virulency of these staphylococci was not present, as three guinea-pigs supported the peritoneal injection of two cubic centimetres of its culture without being disturbed by them.—(*Recueil de Médecine Vétérinaire, 1906.*)

Diaphragmatic Hernia in the Horse [*Mr. Roux*].—Used for light draught, this gelding, aged 10 years, is taken with colic. The history is as follows: The evening before he ate poorly, was uneasy, and in the morning refused his food. Yet he has done a little work. The colics have increased, the mucous membranes are injected, pulse strong and quick, no tympanites, respiration accelerated and expiration double. By auscultation nothing is detected on the left side except in the superior quarter, where the vesicular murmur is exaggerated. The same on the right side. Diagnosis uncertain: Indigestion, pulmonary congestion, pleural exudation or diaphragmatic hernia. Treatment: Chloride of barium, mustard poultices, blood

letting, ether, pilocarpine, etc.; nothing does good; the horse dies. At the autopsy, on opening the thoracic cavity, almost the whole of the small intestine is found, lodged between the external face of the left lung and the thoracic wall. Slightly distended by gas, it is purplish in color and has entered the chest through an opening in the centre of the diaphragm, behind the stomach, slightly deviated on the left of the œsophagus. This opening is irregular, measures about six centimetres, with borders congested. Through it the intestine, the mesentery and the great omentum have passed into the thorax. The small size of the opening, producing a firm constriction on the intestinal loops, diminished the peristalsis and consequently the production of the borborygms, which would have served much to make a correct diagnosis.—*(Recueil de Médecine Vétérinaire, 1906.)*

Complete Fracture of the Radius and Cubitus in a Horse—Consolidation Without Contentive Apparatus [*L. Dupas*].—A severe kick on the lower third of the front part of the forearm makes this horse very lame. There is a small cutaneous wound only, but the soreness is very great and the animal does not rest the foot on the ground; in walking the toe is dragged on the ground. All the symptoms point to a fracture of the bones of the forearm, incomplete but fracture anyhow. The animal is placed in slings and a blister applied over the injured region. The cutaneous wound properly attended to soon healed. On the seventh day following, the leg is much swollen and careful exploration reveals a different state of things; the fracture is complete, and crepitation is well marked, yet the deviation of the bones is not much marked. Taking that into consideration and bearing in mind the condition of the œdema of the leg it was decided to treat the case without resorting to any contentive bandage, plastered or others. The slings were kept on and only the swelling received special attention, namely, lotions and light massage with camphorated oil or alcohol. After ten days the swelling went down and began to define itself to the seat of the fracture. The leg then showed its deformity; it was a little bent backward and a little shortened. After one month the callus was well formed, the animal beginning to put weight on it. The slings temporarily removed, showed that the leg was much emaciated. By passive motion first, and later a little walking and moderate exercise the animal was finally discharged, but of course unable to perform his work in the army; he was sold

and later on killed for the butcher. On examination of the bones it was found that the fracture had been oblique, with the ends slipping over each other. The callus was very large and united both radius and cubitus very firmly together.—*(Revue Générale, 1906.)*

Two Cases of Fracture of the Vertebral Column, One of which is Rapidly Fatal [*MM. Durand and Vignon*].—*Case I.*—Seven years old, this horse in jumping an obstacle, misses, makes a regular sommersault and remains on the ground unable to rise. When he is examined, he presents a little back of the base of the withers and on the median line a hard swelling slightly œdematous and as big as a hen's egg. By pressure upon that point, crepitation is detected and the animal shows great pain. Paralysis and anæsthesia of the hind quarters are complete. At the post-mortem severe lesions are exposed: the eleventh dorsal vertebra is fractured, in numerous small pieces, the spinal cord is cut in two, and the spinous processes of the ninth, eleventh and twelfth dorsal are fractured at their bases; a large hæmorrhagic collection due to the laceration of the inter-vertebral bloodvessels exists on the internal face of the ribs and infiltrates in all the surrounding muscles. The aorta is sound. *Case II.*—One day, a mare is brought to the writers for treatment. She always carries her head down and struggles when attempts are made to raise it. Otherwise the mare is well, eats her ration and her functions are normal. It is supposed that she has only a little sore neck, and after a simple treatment she seems to have sufficiently recovered to resume work. A few days later, as she is engaged in slight work, she suddenly falls, and makes uselessly violent efforts to get up. She is in the right lateral decubitus; now and then moves her fore legs. On a level with the superior third of the neck, there is a large swelling, elastic and somewhat fluctuating; respiration is slow and gradually stops, pulse is quick and strong, there is venous pulse, the eyes and mouth are cyanotic, general sensibility much reduced, eye immobile and pupil dilated. In a few minutes death takes place. At the autopsy were found: A large hæmatoma, where the swelling existed on the outside and all the perirachidian muscles are infiltrated with blood, on account of the rupture of both vertebral arteries. The anterior articular processes of the third cervical vertebræ no longer correspond to their congeners of the axis, which itself has made a motion of torsion from left to right and has its right articular process under the corresponding one of the third cer-

vical, while the left remains under. There results from this a pressure over the spinal cord, quite severe, but yet not sufficient to divide it. There is also surrounding the cord a large clot of blood extending from the rachidian bulb to the base of the neck. There is, besides, a complete fracture of the third cervical vertebra at its anterior head, the body is broken obliquely downwards and backwards; the head, perfectly adherent to the axis, is completely separated from the body. A large ulceration existed on the articular cartilage of the left apophysis of the axis. Besides the extent of the lesions, the interest of this case lies in the presence of the clot of blood, making a true increasing strangulation upon the bulb, to which was added the pressure of the cord by the dislocated second vertebra.—*(Revue Générale de Médecine Vétérinaire, 1906.)*

GERMAN REVIEW.

By J. P. O'Leary, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

Ascites in a Bird [*Asst. Clin. Vet. Jacob Wohlmuth*].—At one of the clinics for small domesticated animals held during the month of April of this year, a hen was examined and diagnosed as suffering from ascites. Notwithstanding this condition the bird seemed lively and had a very good appetite. After the operation of tapping, a large quantity of fluid was removed (about three-fourths of a litre). Prof. Storch had the kindness to undertake the analysis of this fluid. His report is as follows: The fluid was almost colorless, like water, sp. gravity 1,010 at 15 C. and intensely alkaline in reaction; considering the degree of alkalinity, it required 30 c.cm of 1/10 normal sol. of sulphuric acid to neutralize 100 cm. of the ascitic fluid. The albuminous substances present were albumins and globulins. Sugar and glycogen were not detected by the ordinary tests. The greater portion of the mineral ingredients were composed of the chloride of sodium and calcium, the carbonates and phosphates of calcium and magnesium, a trace of uric acid present. The fluid was blood serum. A subsequent operation was performed to obtain more of the fluid from the abdominal cavity, but was unsuccessful. However, it seemed that this morbid condition did not interfere with the general health of the patient. The hen still lives and is in a well-nourished condition. Through palpation of the cloaca, it may be assumed

that a degeneration of the ovaries was probably the cause of the ascites.—*(Tierärztliche Centralblatt, No. 26.)*

MEDICINAL REMEDIES [*Dr. Diem Burghausen*].—For *acute tympanites in calves*, the following was administered with good results: (1) Ol. terebinth., 10.0 grams; ol. carui, 1.0 grams; ol. menthæ pip., 1.0 grams; ol. caryophylli, 2.0 grams. Mix. This is a prophylactic. Afterwards one tablespoonful of cod-liver oil three times daily before feeding. (2) For *Diarrhœa:*—Acid muriatic 10.0 grams, in one litre of water, to be given one hour after feeding. (3) Bisulphide of carbon given in gelatine capsules *destroys the œstrus larva* (or bot), to be followed by tartar emetic as a laxative, in the drinking water. (4) For *petechial fever:*—Argentum colloidale is injected subcutaneously, although large swelling forms as a consequence. However, they readily disappear by massage treatment. (5) Potassium iodide is given in *subacute inflammations of the brain*, 25.0 grams in 200.0 grams of water. Dose, one tablespoonful twice a day. Later, Fowler's solution of arsenic. These remedies are prescribed also for chronic nasal catarrh in horses and dogs. Animals usually recover after two or three weeks' treatment. (6) Formaldehyde 10 per cent. is used for *cracked heels* and *old calk wounds;* subsequent treatment with ungt. plumbi acetatis. (7) A 1 per cent. solution of picric acid is recommended for *bed sores*, also for *suppurative pruritic inflammation at the root of the tail.* As a secondary application, cresol liniment is advocated in 3½ per cent. solution. (8) Extract hydrastis fluidum is used with success in the treatment of *polyuria* and *bloody milk.* (9) Aconitin is prescribed for *heart failure* with benefit.—*(Wochenschr. für Tierheilkunde und Viehzucht).*

THE GASTRUS LARVAL DISEASE OF THE HORSE IN ITS SIGNIFICANCE FOR THE REARING OF FOALS, PARTICULARLY IMPROVED BREEDS [*Staff Veterinarian Kröning*].—K. observed within the last five years very grave symptoms of disease in 5 horses and 26 foals; even 3 foals died as a result of the action of the gastrus larvæ in considerable numbers. In addition to the symptoms of cachexia, there appeared in many cases those of colic. The diagnosis was rendered easier by the history that the animals had enjoyed a long season at pasture. K. observed as follows, that when the foals were brought back from the pasture in the autumn they were in good condition. Soon after, the appetite became intermittent, with consequent roughness of the coat, paleness of the visible mucous membranes, œdema,

cardiac weakness, exhaustion. Regarding treatment, Perroncito recommends bisulphide of carbon as the best remedy. K. prescribed the bisulphide in two capsules, each containing 8.0 grams every two hours; this dose was repeated three times; in all 48 grams were given. As a secondary treatment the following may be administered with benefit: tartar emetic, 10.0 grams in the drinking water the morning after the last dose of the carbon bisulphide; an aloes ball or castor oil with calomel. The author's aim in his publication is to bring about a change from the false conception that the gastrus larvæ may be harmless even when occurring in large quantities.—(*Zeitschrift für Veterinärkunde, 1906, S. 202.*)

INVESTIGATIONS WITH REGARD TO THE INFLUENCE OF THE OVARIES AND THE CORPUS LUTEUM UPON BIRTH [*M. Dubois*].—Aroused by the work of M. L. Franenkel, Dubois had experimentally sought to solve the question, what influence the ovaries, especially the corpus luteum, has upon the initial stage of parturition? He removed by operation, the ovaries of rabbits which were in various stages of pregnancy. They threw living young after the expiration of the normal time. Similar results were obtained by Jourdon in the case of pregnant sows. He injected other pregnant rabbits subcutaneously or intravenously with the parenchymatous juice from the ovaries of pregnant rabbits, with the same success. So that after the expiration of the normal period of gestation, birth took place. Neither the ovaries nor corpus luteum or their secretions are accountable for the stimulation of the uterine contractions.—(*Revue Vétérinaire, 1905, No. 12.*)

THE INTESTINAL AND VAGINAL EMPHYSEMA OF SWINE [*Dr. Jäger, Frankfurt*].—Dr. Jäger sought to refute the physical theory concerning the origin of the so-called mesenteric emphysema. He has established by cultivation and animal experimentation that the organism which he names as *Bacterium coli lymphaticum aërogenes* is the cause of the emphysematous condition. This organism is peculiar in that it possesses great motility and the ability to form gases. The gas vesicles never develop in the free connective tissues, but in the wall of the affected parts. The minute gas vesicles originate in the intestinal villi; they wander from the lymphatics through the mucosa and adjacent parts until they reach the serosa, and only when the development of the gas vesicles are well advanced, giant cells appear, which may contain many hundred nuclei. These changes have been already referred to by previous authors as

characteristic. Lubarsch is of the opinion that the vaginal emphysema of females is not caused by the *Bacterium coli lymphaticum aërogenes.* Dr. Jäger has not been able to determine by bacteriological examination the cause of this emphysematous condition.—(*Tierärztliche Centralblatt, No. 31.*)

How Long Does the Tetanus Bacillus Retain its Virulence [*Croci*].—Croci saw a mule that contracted tetanus, which terminated fatally. This animal had chafed wounds on both sides of its back, which were caused by a pack saddle. A second mule, owned by the same person, had the same saddle placed upon its back, which also chafed the skin underneath, causing tetanic infection, resulting in the death of the animal. After three years the same owner bought a new mule and placed the same saddle again on this animal which the dead animals carried three years previously. After ten days the third mule was affected with tetanus and died. This animal had also two chafed wounds caused by the saddle. Croci concludes from this incident as reasonable that the tetanus bacillus in the saddle was still virulent and had led to an infection of the wounds.—*(La Clinica Veterinaria, 1906, S. 641.)*

Investigations Concerning the Cause of Hydronephrosis in Swine [*Dr. Lucks, Hamburg*].—Hydronephrosis in swine is caused through a congenital malformation in the position of the ureters, which lie too far posteriorly in the neck of the bladder and their peculiar position and loose attachments of the relatively very large bladder. In exceptional cases, through pathological conditions, hydronephrosis may be caused by inflammation of the bladder and ureters, obstruction of the ureters by urinary calculi, obliteration of the orifice of the ureters in the bladder, and so on.—*(Monatshefte für Prakt. Tierheilk., Band XVI., Heft. 7 und 8.)*

The Bacterial Flora of the Healthy Genital Canal of Cattle in Its Significance for the Conditions Arising from Puerperal Fever [*Assistant B. Denzler, Stuttgart*].—The bacterial flora of the vulva, as Denzler had determined, is numerous and variable. The vestibule secretion contains pathogenic microörganisms, especially the *Staphylococcus pyogenes aureus, albus* and *citrus*, the *Streptococcus pyogenes* and the *Bacterium coli communis.* These bacteria, with the exception of the *Bacillus coli communis*, are found in an attenuated condition. In the interior of the healthy vagina none of the above mentioned pathogenic bacteria can vegetate under normal conditions. In abnormal transitory presence of these bacteria

in the vaginal secretions the external os forms the line of demarcation between the germ-containing and germ-free zone of the genital canal. The vagina of calves, of non-pregnant and pregnant cows, has a faculty of self-cleansing, that is, the vagina is able to eliminate bacteria, which either gained access accidentally or are experimentally placed therein, especially those causing puerperal fever. This cleansing of the vagina is complete and permanent. The duration of the self-cleansing process of the vagina depends upon the species of microörganisms and varies between 18 and 117 hours. The phenomenon of self-cleansing in cattle is not entirely analogous to that observed in women. Antiseptic vaginal douches do not aid the physiological cleansing process. The ability of freeing the vagina from bacteria in cattle depends on the living organism itself and is proven upon the occurrence of a leucocytosis or phagocytosis. Self-infection with vaginal bacteria is excluded in cattle. An auto-infection due to bacteria from the external genitalia or from exterior sources is, on the contrary, possible.—(*Monatshefte für Prakt. Tierheil., Band XVI, Heft 4 und 5.*)

Dr. B. O. Minge (McK. '01), has been appointed inspector B. A. I. and stationed at Chicago.

An excellent college bulletin is the *Journal of the McKillip Veterinary College Alumni Association*, published by the Executive Committee of that recently formed organization, of which Dr. Charles Frazier, 1639 Wabash Avenue, Chicago, is Secretary. It contains original articles, editorials, reports of cases, colleges items and alumni news. We congratulate the Association upon its enterprise and evidence of determination to make its influence felt for the benefit of its members, its *alma mater*, and its profession.

"Lou Dillon" Half Sister to a Mule.—*Memphis, Jan. 20.*—Information reaching the local colony of horsemen in winter quarters at the "Two Minute" track, including Ben Kenney, Ed. Geers and other noted trainers and drivers, is to the effect that Lou Dillon, the trotting queen, will soon bear the unique distinction of being half sister to a mule. Letters received from California, where Lou Milton, the twenty-five-year-old dam of Lou Dillon, is stationed, tell that a mule foal is expected. It is believed here that C. K. G. Billings, Lou Dillion's owner, will buy the mule at almost any price, as there has been some talk of freak collectors purchasing Lou Milton's foal for exhibition purposes.—(*New York Sun*).

SURGICAL ITEMS.

By Drs. Louis A. and Edward Merillat, Chicago, Ill.

MALIGNANT ŒDEMA, WITH REPORT OF TWO INTERESTING OUTBREAKS.

From time to time we have brought this subject before the readers of the Review for the single purpose of bringing it more conspicuously before the rank and file of the veterinary profession of America. Although this fell affliction of all mammals has been recognized as a special entity for many years by Europeans, and although many years have already elapsed since Pasteur demonstrated its bacterial origin and isolated the causative microbe, it is rather discreditable that many of us have heretofore failed to recognize the disease when encountered.

Our correspondence very often contains a letter of inquiry about a mysterious death of a horse from a disease that greatly resembles symptomatic anthrax of cattle. As the horse is well known to be non-receptive to anthrax bacterium, a case of malignant œdema in districts where the former is rampant, if not recognized, may easily excite the curiosity of an unsuspecting practitioner, the two diseases being so similar in many particulars. Both the local and the general symptoms simulate each other.

In France malignant œdema was recognized as early as 1825 by Renault. In 1875 Pasteur announced his discovery of the specific microbe, which he named the *Vibrion septic.* In the lecture courses of at least some of the most prominent American colleges no mention was ever made of the disease until English translations of German books on pathology were introduced as text books, and even then no special description was undertaken because of the supposed rarity of the disease, and probably because it had not been recognized as a special entity. The galloping, phlegmonous blood-poisonings were not separated one from another, but were described under the one ambiguous, if not ridiculous phrase, "phlegmonous erysipelas."

Nomenclature.—In England, Germany and America the disease is quite generally called "*malignant œdema*," to the exclusion of all of the other names which have from time to time been assigned to it in different countries and by different pathologists. In France it is now quite generally known by the

name of "*gangrenous septicæmia.*" "*Traumatic gangrene,*" "*emphysematous gangrene,*" "*thundering gangrene,*" "encroaching gangrene," "instantaneous gangrene," "*gaseous gangrene,*" "*gaseous septicæmia* and "bronzed erysipelas" are among the many more or less lucid appellations.

Receptivity.—Malignant œdema occurs in man, in the horse, in the ass, in the sheep, in the dog, and even in the domestic fowls. There is still some doubt as to the receptivity of bovines, although Nocard once announced having found the septic vibrio in muscular tumors of cattle, and Kitt experimentally conveyed the disease to the ox. These and other facts indicate that cattle are receptive. The dissenting opinions undoubtedly result from errors in diagnosis; from mistaking it for symptomatic anthrax. It is quite safe to-day to announce that malignant œdema affects all domestic animals and man. According to Cadéac, the relative receptivity of animals is indicated in the following descending scale: Horse, ass, sheep, pigeon, rabbit, chicken, white rat, dog, ox, cat, duck.

Bacteriology.—The bacillus of malignant œdema, isolated by Pasteur in 1875, is an anærobic, ærogenic, motile, sporogenous, flagellated bacillus. It is an inhabitant of well-tilled soil and its products—hay, cereals, vegetables, etc. It is from two to ten microns long and about one micron thick. It does not take Gram's, but stains readily with Loeffler's blue. It can be cultivated both in liquid and solid media, growing with special rapidity at the heat of the body, but slow at ordinary room temperatures.

The bacillus is promptly killed by exposure to oxygen, but effectually resists antiseptics in ordinary strengths. Five per cent. solutions of carbolic acid do not sensibly modify its virulence after twenty-four hours' emersion. It resists both desiccation and moisture, and is only killed after several minutes' boiling.

In living tissues, if inoculated into a favorable, sheltered environment, especially if associated with other pathogenic microbes, it produces a reaction in from twenty-four hours to three days, in the form of an advancing, painful, crepitant swelling that radiates in every direction, with great rapidity, and at the same time immediately causes grave systemic disturbances which terminate fatally in twenty-four hours to five or six days, unless combatted by an energetic treatment at the seat of infection. A fatal termination is inevitable, unless it is promptly recognized and energetically treated.

Occurrence.—Malignant œdema is not a very common disease. Its rarity does not harmonize with the wide distribution of the microbe which, according to Pasteur and later Cornevin, is very abundant in well-cultivated soils. The infrequency of the disease is due to the fact that the pathogenicity of the microbe depends upon a number of conditions which are not frequently combined. The microbe is anærobic; it requires a well-sheltered environment in the living tissues; the trauma, in addition, must be somewhat bruised or otherwise provided with a suitable soil for microbian growth; and it must be associated with accessory bacteria, such as the golden staphylococcus, to prevent it from falling prey to englobing phagocytes.

There seems to be abundant experimental proof that the bacillus of malignant œdema, like the bacillus tetanus, does not act alone, but requires the assistance of other "favoring" bacteria, which play the important rôle of assisting the specific microbe to gain a "foothold" in the healthy tissues around the trauma. These essential conditions account for the infrequency of the disease among animals as compared with the wide distribution of the microbe.

Symptoms.—In the horse the disease follows wounds about the shoulders, neck, chest, withers, buttocks and feet. Its first manifestations are pain at the seat of inoculation and crepitation in the surrounding subcutem, together with early general symptoms: fever, anorexia, pronounced dejections, etc. The local phenomena and the general symptoms accentuate rapidly. The œdema advances in every direction, leaving a gangrenous area behind, from which froth will exude on section with the scalpel. If the subject survives long enough—that is to say, if the microbian invasion is not promptly fatal—the swelling becomes enormous and the gangrene deep and extensive, which feature led Pasteur to characterize the disease as "putrefaction of the living subject."

Sometimes the subject dies quite suddenly after only twenty-four hours and before there has been any warning of the gravity of the affection. More often, however, it lingers for several days, and if the infected area is submitted to an energetic extirpation of the hot-bed, and free incision of the emphysematous surroundings, the advancement may be temporarily checked and the general symptoms improved. But usually this treatment is useless (unless executed very soon after the appearance of the first local symptom) and the patient dies in spite of everything, three to seven days later.

Malignant œdema affecting the feet lacks some of the pathognomonic signs. The emphysema confined within the hoof cannot be as easily recognized as in the loose subcutaneous tissues. On paring the hoof, however, limited quantities of gas sometimes escape and the frothy exudation is never absent. The lameness is intense, no weight is supported on the affected leg, large sections of hoof may be torn off with the pincers without provoking hæmorrhage, the respirations are markedly accelerated, the pulse is quick and small, there is distress expressed in the countenance, perspiration appears in large patches at different parts of the body, decumbency is avoided, the whole body trembles and finally topples over in sheer exhaustion. Death usually follows a few hours later.

In the ox the symptoms, as above mentioned, simulate symptomatic anthrax, especially when caused by wounds about the shoulders, thighs and hips. In this species it may follow parturition and then present features not seen in black-leg. The pudendum, three to four days after parturition becomes swollen, tense, sensitive and crepitant. The tumefaction surmounts the root of the tail, advances over the gluteals and often extends as far forward as the croup and loins. Downward, it may extend as low as the hock and forward as far as the udder.

It is differentiated from symptomatic anthrax by bacteriological examination, by occurring in districts where the former disease does not exist, by affecting only isolated cases instead of spreading through the herd, by affecting animals of all ages instead of only the young, and by experimental transmission to species that are non-receptive to the latter.

First Outbreak.—The use of the word "outbreak" in connection with malignant œdema may be somewhat misleading, as a number of animals are never simultaneously attacked, except when each has been submitted to the same cause or else when the infection is carried directly from the infected wound of one animal to favorable wounds in other animals, as might easily occur in the performance of a number of consecutive surgical operations, after having contaminated the hands or instruments with infected wound secretions from a subject affected with the disease. In short, malignant œdema is not contagious, epizoötic nor enzoötic. It is but a wound infection and the wound must be a special one. Still, the fact that on these two occasions, several horses were simultaneously or consecutively attacked before the spread was controlled, justifies the use of the word

"outbreak," if for no other purpose than that of emphasizing the dangerousness of the disease.

The history of this outbreak is dated November, 1906. It occurred in a well-known veterinary hospital where more than usual precautions are taken in the direction of antisepsis. The first case was caused by an accidental wound, from which three surgical wounds each on different animals became infected. The first case entered the hospital immediately after sustaining a serious injury in a runaway accident, consisting of a contused, lacerated stab with a blunt, wooden shaft of a single delivery wagon. The wound was located in front of the shoulder at the level of the middle third of the scapula. It was treated as usual, but on the third day the surrounding tissues began to swell rapidly; the appetite failed; the countenance expressed anguish; the temperature rose to 104° Fahr., and attempts to move provoked intense pain. The nature of the complication not being immediately recognized, the patient was treated for septicæmia, consisting of free extirpation of the tissues lining the wound, of free drainage, and of a prolonged irrigation with hot mercuric chloride solutions. Twenty-four hours later the complication was recognized as malignant œdema by the appearance of the characteristic emphysema in the surrounding subcutem, by the pronounced accentuation of all of the symptoms already described, and by the frothy secretion that exuded from every visible part of the lesion. The diagnosis was, however, made too late to be of service, as the patient was already in a dying condition and the local phenomena had developed beyond control. Death ensued about twelve hours after the disease was recognized, thirty-six hours after the appearance of the first symptoms.

After operating upon this case of supposed septicæmia, three other horses were submitted to operative treatment during the following two hours. The cutting instruments were sterilized by boiling according to an adopted custom, but no special attention was given to other possible carriers of infection, such as the hands, especially those of the assistants, basins for antiseptic solutions, clippers, rubber syringe, and the operating table, because the animal previously treated was not suspected of having so serious an affection as malignant œdema, and possibly also on account of a customary reckless inclination to hurry through a number of operations in a short space of time.

The second patient was submitted to a radical operation for fistula of the withers. Two long, parallel incisions were made

along either side of the median line and a long strip of the superspinous ligament was resected. These wounds were packed with antiseptic cotton and sewed up to arrest hæmorrhage. The horse was sent home, about six miles away, with instructions to remove the packing on the following day, to irrigate the wounds and then to apply an absorbable antiseptic powder. These instructions were not followed, as on the fourth day, the horse having been reported in a serious condition, the packing was found still sewed up in the wound. In fact, no attention whatever had been given it. The whole withers was enormously swollen, and a reddish froth was bubbling between the stitches along the entire length of each wound. The patient breathed heavily, ate nothing, refused to move about, had a high fever, and in fact showed every symptom of approaching dissolution. The wounds were opened and the packing was removed. Froth bubbled from every part of the raw surfaces. On section the tissues bounding the wounds were insensible, bloodless, dead; only froth exuded from them. The whole withers was mortified. Death followed twenty hours later, about five days after the operation.

The third patient of this outbreak, had sustained a serious contused wound at the crest of the occiput by rearing and falling backwards against the street curbing. A cursory examination on the street showed that the occiput was fractured and protruding through the broken, bruised skin. This operation followed closely after the fistula operation, and consisted of clipping the forelock, mane and hair of the environs; resection of two fractured segments of the occipital crest; and a thorough irrigation of the recesses of the wound with hot mercuric chloride solution. As the bleeding was trivial, the wound was not packed but only sprinkled freely with boric acid and iodoform. Four days later this subject too fell a victim to malignant œdema and died a lingering death after ten days of illness. The death of this case was undoubtedly delayed by the prompt and energetic treatment carried out from beginning to end.

The fourth patient was operated upon immediately after the foregoing one. This subject was lame from a spavin and was submitted to neurotomy of the deep peroneal nerve at the level of the middle third of the tibia. This operation was performed with great care as to surgical cleanliness; in fact, it could hardly have been improved upon from that standpoint. The instruments, some of which had been used in the preceding operations, were all boiled for ten or fifteen minutes; the operator's hands

and those of the assistant were well washed; the seat of operation was shaved, washed with soap and water, rinsed with mercuric chloride solution (1–500) and then bathed with alcohol for a few moments; the technique was carried out without once touching the exposed tissues with the hands; the baling solutions were made from boiled water and the basins containing them had been previously rinsed out under a faucet of scalding hot water; in fact, everything was as clean as possible and the whole procedure was executed with full consideration for the possible danger that might result from the operation on the supposed case of septicæmia previously mentioned. Every avenue through which infection could enter was doubly guarded, because of the nature of the operation. The deep dissection necessary to find the peroneal nerve and the closure of the traumatic cavity afterward with closely inserted sutures, creates a mighty favorable field for sepsis, which in this particular instance was regarded as specially redoubtable. The only unguarded carrier of infection was the air of the operating room, which being constantly agitated by a number of spectators and the leading of horses to and fro continually during the operating hours, undoubtedly suspended abundance of dust. A ray of sunlight always reveals abundance of dust in ordinary rooms, unless special effort is previously made to allay it. In this case no such special precaution was taken, but since the subject affected with malignant œdema (at that time supposed to be septicæmia) had only been in the operating room a short time, it is very evident that the air could not possibly have been the contaminating medium. The hands of both the surgeon and the assistant were undoubtedly the actual carriers of the infection, because these had been covered with blood and secretions from the wound of the infected subject, and although well washed, with a full knowledge of the danger in this connection, the precaution was ineffectual. Hands, well soaked with blood and secretions from a hot-bed of virulent microbes, are always liable to carry infection immediately afterwards, no matter how thoroughly they have been cleansed.

These details are mentioned here to demonstrate the tenacity of the infection we are attempting to describe and the dangers of virulent infections generally.

Twenty-four hours after this subject had been submitted to the above-mentioned operation, a pronounced painful swelling appeared in the region. There was lameness, exceptional tenderness on palpation, an œdematous circle five inches in diame-

ter, and a fever of 103° Fahr. Suspecting that this complication was an infection from the supposed case of septicæmia, which by this time had been recognized as unmistakable malignant œdema, the wound was opened, laid bare, and irrigated with hydrogen peroxide, and the surrounding skin "button-holed" with numerous incisions to admit air into the subcutaneous tissues. The fever continued during the succeeding four days, instead of dropping to normal as in the case of ordinary septic states following new wounds; there were slight colicky symptoms manifested from time to time; and dejection and anorexia were pronounced. The patient recovered slowly during the next two weeks, but the local gangrene left behind a very refractory wound, which cicatrized very slowly during the next two months.

Although there was no bacteriological diagnosis made in any of these four cases, the correctness of the diagnosis in the first there cannot be refuted. Malignant œdema has characteristic features which readily identify it from any of the other acute, spreading, fatal wound diseases. In these three cases the characteristic features were in evidence. The diagnosis of the last case might be questioned, because the pathognomonic symptoms (emphysema) was wanting, but this might easily be explained by the prompt treatment administered. The obstinate general symptoms and the gangrene of the wounded tissues, identify it from ordinary phlegmons.

SECOND OUTBREAK.—The second outbreak occurred during December, 1906, in a small country village in the State of Iowa. In this instance, three horses submitted to caudal myotomy, were the victims. The operations were performed in the stable by a skilful veterinarian, who, in describing the history of the unfortunate event to the writer, on the scene at the time of the outbreak, stated, that in view of the high value of the horses, more than ordinary pains had been taken to perform the operations in obedience to the dictates of aseptic surgery. The tails were well washed with a strong antiseptic solution, and the tenotome, previously sterilized, was kept in ethyl alcohol between operating intervals.

These animals were "placed in the pulleys" with exceptionally heavy weights during the ten days following the operations. Two twelve-pound window weights were used for each horse, and the "pulleying" was continued incessantly for ten days, day and night. About the fourth day the seats of operation became painful, somewhat swollen and discharged a

hæmorrhagic pus in considerable quantities. The treatment of this complication was undertaken by the stable attendants. The small wounds were syringed with liberal amounts of a solution of creolin and water from a rather dirty stable bucket, which was also used to wash off the pus that accumulated around the surgical wounds. About twelve days after the operations three horses out of a total of four operated upon, fell seriously ill and began showing symptoms of malignant œdema, the exact nature of which was promptly recognized by the veterinarian called upon to administer treatment. The treatment consisted of free incision of the œdematous areas and liberal irrigations with hydrogen peroxide. Of these three horses, one died and two recovered, thanks to the promptness of the treatment.

GRIGOROFF, in *La Presse Medicale* for Dec. 19, states that he has produced a vaccine from the bodies of tubercle bacilli which he has found experimentally to immunize animals against tuberculosis.

GUARDING THE UNITED STATES AGAINST SURRA.—*Washington, Jan. 27.*—The Agricultural Department has just overruled the military department of the Government, and as a result Gen. Leonard Wood will not be permitted to bring back from the Philippines into the United States when he returns his favorite riding horse and his much prized dogs. The General expects to return soon and desired to send the animals ahead. Secretary Wilson is taking extraordinary precautions to guard against the introduction into the United States of surra, a disease quite common among live stock in the Philippines. The bacillus of surra is described as a snakelike creature that multiplies rapidly and the disease germs are transmitted most commonly by flies. The Agricultural Department holds, therefore, that an examination and clean certificates at the port of departure in the Philippines is not a sufficient safeguard against the introduction of the disease, for flies may infect the animal after it is on board the steamer. Gen. Wood has yielded, after some reluctance, to the Secretary of Agriculture. Not long ago the wife of an army officer returning from the Philippines tried to bring in a pet dog. The animal was turned back at the port of San Francisco, and later a secret attempt was made to enter the animal by the Canadian border, but the vigilant agents of Secretary Wilson, on the lookout ever for surra bacilli, apprehended the tabooed canine and branded him with the figures "23," regardless of womanly sobs.—(*New York Sun.*)

ARMY VETERINARY DEPARTMENT.

ACCEPT THE ARMY VETERINARY BILL AS IT STANDS.

CAMP STATSENBURG, P. I., December 14, 1906.

Editors American Veterinary Review:

DEAR SIRS:—I have just received the November issue of the REVIEW and hasten to state that I fully agree with Dr. Jewell to accept the Army Veterinary Bill as it stands, and to beware of amendments. Nothing else is likely to endanger its passage. Yet, we have in the Army one or two past-masters in the art of tacking cloudy amendments on clear-sky bills, and samples of them are contained in all our veterinary bills passed so far. They read about this way: "Provided, further, that the veterinarians of Class A be exempted from provision X." When Class A was looked up, there was *only one* veterinarian in it, and he would tell with a twitch in his eye: "Me and my political friends did it." Somebody has already been tinkering with the bill, because there are too many "provided" in it to be an original draft, and these provisos provide pretty well for the colleagues of over 15 years' service, some of whom have not yet reached middle age, while others of just less that length of service and past 50 years of age have to stand still another examination, and "if they don't pass it or refuse to take it, they shall be dismissed the service with three months' pay." Who does not scent in this a little of "promotion by selection, promotion by elimination, promotion by—"well these things are in the air just now in the army and we might as well take our dose of it.

But, with all, the Bill as it stands contains all that we can expect collectively at this time. We should all understand that it is but a stepping stone for further legislation, and the study of the language used clearly indicates that it is a compromise between those that wanted to do something and those that wanted to do nothing. Let us get this stepping stone first, even if it looks a little slippery.

But in justice to the majority, Dr. Jewell, rally around you all those good army colleagues who are so fortunate to be in the States at this time, and stop this nefarious practice of the amendment-jugglers, and make them understand that their absence from Washington will be much appreciated even in the Philippines.

OLOF SCHWARZKOPF.

CORRESPONDENCE.

THE PASTEUR VACCINE CO. SETS ITSELF RIGHT.

NEW YORK, Feb. 8, 1907.

Editors American Veterinary Review:

DEAR SIRS:—Our attention having been called to assertions made to members of the veterinary profession, with evident intent to discredit our products, we ask you to publish the enclosed in editorial form.

Very truly yours,
PASTEUR VACCINE CO., Limited.

* * *

The Pasteur Vaccine Co., Ltd., 7 Rue Meyerbeer, Paris, France, and 80 Lombard St., London, England, with branches in New York at 366–368 West 11th St., and in Chicago at 441–445 Wabash Ave., resent assertions said to have been made to some of the leading members of the veterinary profession.

The Pasteur Vaccine Co. are the sole Concessionaires of the celebrated Institut Pasteur, Paris, France. This is a plain statement of fact and the Veterinary Serums and Vaccines of the Institut Pasteur are brought to the profession through this company alone.

These Vaccines and Serums are:

Pasteur Anthrax or Charbon Vaccine, successfully used since 1882 upon more than 40,000,000 animals in all parts of the world. Made by scientists who coöperated with Pasteur in his discovery of Anthrax Vaccine; also Antistreptococcic Serum, Antitetanic Serum, Mallein and Tuberculin.

The various forms of Blackleg Vaccine, powder, cord and pellet, are also exclusively marketed by the Pasteur Vaccine Co., and have been successfully used since 1884 on over 36,000,000 calves.

These Blackleg Vaccines are produced for the Pasteur Vaccine Co. by the discoverers, Profs. Arloing, Cornevin and Thomas, and were introduced into the United States in 1895.

The facts in the case are so plain, and have been so often plainly stated, that it is almost incredible that any one should assert or believe anything to the contrary.

TREATMENT OF ECZEMA.

CAMPBELLFORD, ONTARIO, Jan. 26, 1907.

Editors American Veterinary Review:

DEAR SIRS:—I was interested in reading the article on "Eczema" in the January number, *re* "Sysonby," by Dr. William Sheppard. I have had several cases of somewhat that nature in my practice, and for years I worried over them until I fell into the line of treatment given below, and from which I have uniformly good results. I do not state that it will always make a cure, but the results are such that it is surely worthy of a trial by practitioners.

Prepare the animal for a purge (and in my locality I give aloes barb., 10 dr., calomel, 6-8 gr.—though I find that localities differ in reference to cathartics). Then apply locally potas ium hydrate in solution, 2 dr.; corrosive sublimate, $7\frac{3}{10}$ gr.; citric acid, $3\frac{2}{5}$ gr.; creolin, 1 oz.; nebulin, 4 oz.; aqua puris, q. s. *ad* 8 oz. Rub well in wherever affected and repeat in two days. The first application should be washed off with castile soap and rain water before the second one is applied. Usually the second application will cure ordinary cases.

Yours respectfully, G. A. HAY, V. S.

THE report of the New York Zoölogical Society for 1905 shows that there were then in the park 624 mammals, 687 reptiles, 1,560 birds, making a total of 2,871 specimens, representing 656 species.

NEW YORK ALUMNI IN CHICAGO.—On Friday evening, January 18, the alumni of the N. Y. State Veterinary College, residing in Chicago, were entertained at the home of Dr. Andrew English, 5413 Jackson Ave. The following alumni were present: M. L. Davenport, '03; A. English, '05; R. J. Stafford, '06; F. L. Foster, '06; E. W. Little, '06; W. Nelligan, '06; L. T. Giltner, '06; W. Treman, '05; A. E. Merry, '06.

INSPECTION OF CATTLE AND MEAT IN PHILADELPHIA.—Dr. A. G. Schreiber, in his annual report to Dr. A. C. Abbott, chief of the Bureau of Health of Philadelphia, shows that during the past year his division had inspected 152 slaughter houses, most of which were found in a fair condition; made 39,044 inspections of dressed meats; condemned 337,695 pounds of meat; inspected 56,986 living animals; inspected 21,269 carcasses, of which 562 were condemned; and brought fifteen prosecutions, with fifteen persons held for court.

THE VETERINARIAN IN POETRY.*

By GEORGE G. VAN MATER, M. D., D. V. S., Brooklyn, N. Y.

(Air: "Soldier and Sailor, Too." With apologies to Mr. Rudyard Kipling.)

As I was going 'ome to bed,
Through a muddy country lane,
I seen a chap in a cravenette, a trudgin' through the rain,
'E 'adn't a match an 's pipe was out,
An' I ses to 'im 'Oo are you?
An' 'e ses I'm a Vet, a common Vet,
Half horse an' half human, too.
Now 'e never gits paid for half he does,
An' 'e does the work of two,
An' 'e isn't one of the gentle folks,
An' 'e ain't like me nor you,
'E's a sort of a bloomin' chameleo type,
Half cow an' half human, too.

An' I seen 'im again all over the shop,
A playin' all sorts of rags,
Like settin' a fractured maxilla
With a couple of touch line flags.
An' Fifth Avenue owes 'im money,
For they gives 'im work to do,
Though 'e's only the Vet, the common Vet,
Half goat an' half human, too.
An' the quarantine board they sits on 'im,
An' tries to dock 'is screw,
Though 'E 'as 'is bread and cheese to git,
The same as me or you.
They think 'e's a haughty philantocrat,
Half dog an' half human, too.

An' I seen 'im again with a knife, an' things,
An' the sweat was on 'is brow,
'E was trying to mend the guts of a cat
As 'ad spiked 'imself in a row;
'Twas late at night, an' 'e 'adn't no light
To see what 'e 'ad to do,
An' 'is pal was a Vet, a common Vet,
Half lamb an' half human, too.
'E 'adn't got far with 'is little job,
'E wasn't but half way through
When the cat gits up an' goes off for a drink,
The same as it might be you.
Ho! they ain't no special anæsthetues,
Half cat an' half human, too.

But there weren't no call to do as you done
When your canary bird was low,

* Read at Annual Banquet of the New York-American Veterinary College, 1906.

An' you fetched 'im out in the dead of night
An' 'e 'ad six miles to go.
For 'e 'ad it before, an' 'e 'ave it again,
An' you knew just what to do,
You didn't want the poor old Vet,
Half bird an' half human, too.
You pays 'im? What? A couple of bones!
An' your earnin' thirty-two;
An' *E*' 'as to suscribe to *your* trottin' club,
Which you're too mean to do,
Because 'e's the Vet, the common Vet,
Half bull an' half human, too.

Now I never believes in them specialist thieves
What stammer and grunt and blow,
As'll watch your horse die, with a winkin' eye,
For a hundred dollar or so,
An' when its "not at once; I'll call over soon"
Which I 'opes it won't be for you!
Let's stick to the Vet, the all-around Vet,
All *man* and whole hearted, too,
An' when we come to the bar of Gawd,
An' 'E says 'Oo out'er hell are you?
(For 'E hates peculiar people an' the Christian Science crew)
Just say I'm a Vet, a common Vet,
All Man and all Human, too.

DR. S. H. CALDWELL, veterinarian to the U. S. Government, stationed in the Panama Canal Zone, spent December and January in Chicago.

THERE is an unsupplied demand for veterinary assistants in New York State, and a number of openings for brilliant young men as teachers at various points.

"THE ORACLE," of the New York *Sunday Herald*, answering the query, "Which should be considered the greatest profession, law, medicine, or theology?" answers: "Medicine, for in it the desire for the exact facts is supreme; while in the others there is a desire to support preconceived views."

THE testimony being taken by the contending factions in the celebrated suit of the stockmen of the Deer Lodge Valley, Montana, against the Anaconda mine owners is most exhaustive. We are told that Dr. D. E. Salmon, who has been on the ground studying conditions on behalf of the stockmen for many months, was on the witness stand for sixteen consecutive days in January, fourteen of which he was under cross examination by the lawyers of the mine owners. Dr. Pearson was on the rack for five days on behalf of the mines.

OBITUARY.

ARTHUR O'SHEA, D. V. S.

The hopeful item published in the January REVIEW to the effect that Dr. O'Shea was believed to be a safe convalescent from pneumonia proved delusive, for soon after the first of the year complications began to develop, and a subdued case of Bright's disease was kindled into activity, paralysis showing in his extremities, and he rapidly failed, the end coming on January 29.

Dr. O'Shea was about forty-seven years old, and unmarried. He graduated from Columbia Veterinary College in 1884, and at once began practice in New York City, where his father had preceded him for many years, and which he continued for about twenty years, when he was appointed through civil service as veterinarian to the Street Cleaning Department, in whose service he remained at the time of his death, being stationed in Brooklyn. While one of thirteen children, he was the last living member of his immediate family.

Dr. O'Shea was a loyal veterinarian, true to the best impulses of professional probity, jealous of his profession's reputation, and ever ready to serve her or any one who labored in her ranks. As an associationist, he was of the kind that get at the wheel and do things. The profession of New York State has good cause to gratefully remember the deceased, for it was through his almost single-handed efforts that the bill exempting veterinarians from jury service was successfully piloted through the Legislature, in the face of much opposition. He made many trips to Albany and remained there for days at a time to untangle knots and keep it moving. We remember with what enthusiasm he announced that the Governor had affixed his name to the sovereign law which would forever relieve members of the profession from the onerous duties of the jury box. More than a month after its passage it was found that some one had tampered with the bill in committee, and it was inoperative for the counties of New York and Kings, the very section which had sought the amendment. O'Shea at once renewed the fight, bringing to his aid some powerful influences in New York City, and he never rested until the objectionable proviso was wiped out; and veterinarians have been enjoying jury immunity ever since.

He was a charter member of the Veterinary Medical Asso-

ciation of New York County, always serving upon its Judiciary Committee, and a large delegation from that Association attended the funeral and laid a wreath of beautiful flowers upon his coffin in loving tribute to the esteem in which their dead comrade was held. He was also a member of the New York State Veterinary Medical Society. Dr. O'Shea was an ardent Democrat, and was many years a prominent member of the T. D. Sullivan Association, which practically took charge of the funeral arrangements.

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VETERINARY MATERIA MEDICA AND THERAPEUTICS. By Kenelm Winslow, M. D., M. D. V., B. A. S. (Harv.) Formerly Assistant Professor of Therapeutics Veterinary School of Harvard University, etc. Fourth Edition, revised. New York: W. R. Jenkins, 851-853 Sixth Avenue 1906.

Dr. Winslow has the commendable quality of keeping his excellent text-book on Materia Medica up to date. The fact that it has been adopted by the schools of America as the standard in their class-rooms has made the demand for it very large, and ordinary editions are quickly exhausted. Instead of simply printing more books to meet the call for them, the author goes carefully over the work when a new edition is demanded and brings everything right up to the condition of knowledge of the times. In the case of the fourth edition, considerable revision was made necessary on account of the many changes in the new Pharmacopœia, and in consequence there have been made 123 additions, 106 changes in the strength of preparations, and 139 changes in the official title of drugs. The Index has also been rendered more valuable by making it a pronouncing vocabulary, and in every department it shows that it means to maintain the position which it has won on its merits—the standard of veterinary therapeutic education in the English language.

The publisher is also entitled to the support of the profession by his liberality and enterprise.

A COLLIE DOG was recently said to have traveled 1500 miles to reach his mistress, who had left him behind when she moved from Duluth, Minn., to The Dalles, Oregon, guiding himself solely by instinct, as he had never been over the route before, and was entirely unattended.

SOCIETY MEETINGS.

INDIANA STATE VETERINARY ASSOCIATION.

The Association was called to order Jan. 3, at 1.30 P. M., by the President, Dr. W. B. Craig, of Indianapolis.

Roll-call was answered by eighty-three, and there were sixty visitors, nearly all graduates.

Minutes of previous meeting were read and approved.

The Secretary's report showed receipts of $47 back dues, with expenditures of $32.20, leaving a balance of $14.80 turned over to the Treasurer. On motion report was referred to the Auditing Committee, consisting of Drs. I. D. Rynearson, J. G. Heighway and H. A. Miller, who reported accounts correct.

While waiting for the Treasurer's report, Dr. J. S. Rodger, of Anderson, on behalf of the Indiana Veterinary College, invited all graduates present to report for banquet at Hotel English at 7 P. M.

The Treasurer's report was read and showed a balance on hand of $234.17 on January 3, 1907. Accepted as read.

The order of business was changed by consent and new members admitted as follows: Drs. Frank H. Riester, Salem; Wm. F. Price, Milford; T. M. Hall, Thorntown; Wm. H. Heaton, Broad Ripple; Fletcher E. Lawton, Greencastle; Alex. L. Marvel, Owensville; Frank Osborne, Petersburg; John H. Snyder, New Harmony; Frank L. Gardner, Indianapolis; Ira G. Winsett, Christman, Ill.; Jarvin S. Crabtree, Paris, Ill.

Committee on By-laws reported progress and asked an extension of time. Granted.

The election of officers resulted as follows:

President—Dr. J. B. Archer, Spencer.

Vice-President—Dr. W. A. Dryden, Columbus.

Secretary—Dr. E. M. Bronson, Indianapolis.

Treasurer—Dr. J. W. Klotz, Noblesville.

Board of Censors—Drs. J. C. Rodger, Anderson; F. W. Anderman, Hartford City, and F. A. Bolser, Newcastle.

The President appointed the following committees:

Program—Drs. G. H. Roberts and F. H. Davis, Indianapolis.

Entertainment—Drs. W. B. Craig and F. A. Mueller, Indianapolis; and J. W. Klotz, of Noblesville.

PAPERS AND DISCUSSIONS.

Dr. H. A. Read's paper on "Pathology and Treatment of Navicular Disease—My Experience."

It proved so practical and full of good advice to the young practitioner especially, that the Doctor was given a rising vote of thanks.

Dr. Klotz: Do you use anæsthetics in your neurectomy, and, if any, local or general?

Dr Read: I do not use any.

Dr. Klotz: What operation is preferred? what per cent. successful?

Dr. Read: Low or plantar; 7 to 8 per cent.

Dr. Klotz: In draft horses, how long will they hold up on high operation?

Dr. Read: Have had them go down in one-half hour, but if they stand long enough, about six weeks to heal, they stand up for good.

Dr. Klotz: Then you have the good results with the low operation?

Dr. Read: Nothing but good results, but most of my subjects have been middle-weight class horses, not draft or speed.

Dr. Klotz: What are your results from high neurectomy for side and ringbones?

Dr. Read: Bad; I consider it dangerous.

Dr. Axby: I have performed high neurectomy behind for nail pricks and ringbones and have lost no feet in all the cases. I have been able to keep track of at least one of them for four years. There is one that I know of that has been done for seven years.

Dr. Davis: What brings about the condition known as navicular disease?

Dr. Read: Peculiarity of constitution brought about by breeding mostly, and some have no known cause. I believe it is the bane of horseflesh to-day.

Dr. Davis: What per cent. of neuromas do you have?

Dr. Read: I always had them at first.

Dr. Davis: So did I.

Dr. Craig: My experience same as Dr. Axby. Some race-horses are run next day. Low operation for navicular disease is O. K. Any sore horse use low; less cocaine for me the better; no high operation and a flat foot for me. Don't pull nerve down, but cut high as possible and take off the lower end.

Dr. F. H. Davis' Paper: "Fever and Its Treatment."

Dr. Rynearson: I have tried to cut aconite out of my practice, but cannot find anything as good; I cannot use veratrum veride.

Dr. Davis: Use gelsemium and bryonia.

Dr. Craig: What about nitrate of potash? I would rather have it than any of the others, speaking of "Shipping Fever."

Dr. Davis: A systemic disturbance is the condition, and I treat the nervous system by using gelsemium, and it brings the animal around quicker than potash for me.

Dr. Craig: If the nervous system is upset, why?

Dr. Davis: I think aside from some cases of infection the temperature is caused from excitement, hysteria, etc.

Dr. Archer: Why have you fallen out with acetanilid?

Dr. Davis: Next day, with acetanilid, bad eyes and pulse for me.

In a report by the State Secretary of the A. V. M. A., Dr. G. H. Roberts, we were told that this was far too good a society for us not to be included in its membership. He pointed to the fact that not only was the cream of the United States there, but eminent men connected with foreign institutions, such as Pasteur, were there to share with us their knowledge. Indications are that the Doctor's talk will bear fruit for the association of veterinarians foremost in America.

Dr. Klotz made a motion, seconded by Dr. Gurley, which was carried with a rush, that wives and sweethearts be invited to our next meeting.

Dr. J. E. Pritchard was declared an honorary member.

It being 5.30 and our banquet occurring at 7 P. M., we adjourned.

BANQUET AT HOTEL ENGLISH, 7 P. M. JANUARY 3.

Seventy-eight were seated and enjoyed the bounteous hospitality of the Indiana Veterinary College until 9.30, when the cigars were passed and we were led in witty sallies by Toastmaster J. C. Rodger, of Anderson. Among the speakers were: Dr. A. S. Jaeger, Indianapolis; Dr. J. D. McLeay, Indianapolis; Dr. Samuel Crose, Indianapolis; Dr. Frank Davis, Indianapolis; Dr. W. B. Craig, Indianapolis; Dr. Ferd. A. Mueller, Indianapolis; Dr. Walter Sharp, Indianapolis; Dr. J. L. Axby, Lawrenceburg; Dr. H. E. Titus, Lafayette; Dr. A. P. Carter, Covington; Dr. T. M. Hall, Thorntown; Dr. Axby, Harrison, Ohio; Dr. J. G. Whitestine, Huntington; Dr. F. W. Ander-

man, Hartford City, whose subjects were: The failure of the Board of Health to recognize the veterinary profession; need of veterinary supervision over meat markets; dairy products; the campaigning against the uneducated, so-called veterinary, etc. The principal train of thought was the elevation of the profession principally by education, also asking for legislation to insure that all future practitioners entering Indiana must be men of ability.

The President of the Ohio Veterinary Association was present, made a pleasing short talk and invited us to join with them and the Kentucky Veterinary Association and have a tri-state meet next summer.

On motion of Drs. Bronson and Davis, a committee was appointed to correspond with the Secretary of the two state associations looking toward the meet suggested by Dr. Axby; the Chair appointed Drs. Roberts, Craig and Bronson.

Adjourned at 11.30 to meet at the Indiana Veterinary College at 9.30 A. M., January 4, for continuance of program and clinics.

CLINICS.

Double tenotomy on an 18-months old colt; operation standing, no confinement; local anæsthetic, stovaine. Operator, J. W. Klotz, Noblesville.

H. E. Titus, of Lafayette, reopened two dogs that he had operated on for appendicitis, one on December 8 and the other on December 18, 1906. Internal ligatures used by the Doctor were of No. 20 linen thread. The results of the operation were highly satisfactory. Sutures had been carried into intestinal canal ready to be expelled.

Dr. G. H. Roberts brought in a live subject of acute glanders which had been injected with mallein and showed temperature of 104½ and at point of injection a swelling of five inches in diameter. Subject was killed and the post-mortem was shown, also smear slides made by Bacteriologist McLeay, which were conclusive under microscope.

Operation for roaring, by J. W. Klotz, of Noblesville. Patient was prepared by inserting tracheotomy tube and injecting a 6 per cent. cocaine solution. Larynx opened by cutting through the thyroidean ligament and cartilage, separating cartilage through body of Pomum Adami. Inside of larynx, operation consisted of removing a large portion of the thyro-arytænoideus muscle and mucous membrane covering it. No sutures were used either externally or internally. Operator advised as after

treatment to allow tracheotomy tube to remain, thereby insuring perfect rest to larynx and wound during cicatrization. Complete recovery in large number of cases is usually expected at the end of eight or ten weeks. Operator objects to separating the cricoid cartilage in all cases where the age is under eight years, because of difficulty experienced by collapse of that cartilage in many of the younger horses operated on in the last year by the old method of removing the entire arytænoid cartilage and stitching the mucous membrane. This difficulty has never been obtained by the operator in separating the thyroid. This no doubt is due to the fact that the thyroid is an incomplete cartilage, while the cricoid is not sufficiently hardened in young horses; also it is the only complete cartilage of the larynx.

Periostotomy for spavin, by G. H. Roberts, of Indianapolis.

This completed the clinic, and we were called to order by President Archer to finish our program and unfinished business.

A bill was presented from J. J. Herron for $9.40 for affidavits furnished for prosecution of empiric St. Clair, of Atlanta. On motion of Drs. Roberts and Craig it was allowed, and an order on the legislative fund for the amount drawn.

Dr. R. A. Craig, of Lafayette, finished our literary program by giving a talk on "Cornstalk Disease." It developed the fact that a great many of the so-called diagnoses may prove to be hæmorrhagic septicæmia or caused from toxic substances.

Dr. Carter: What do you call the disease we have had among cattle in Indiana for the last two years?

Dr. Craig: Has no proper name.

Dr. Carter: Out of 500 cases in last two years I've named it autointoxication. I've found a condition in shuck and stem that has in them a sappy substance. Out of those I treated lost about 1 per cent. Herds not treated lost about 30 per cent.

Dr. Craig: Send us some of those stems and we will investigate. Peters has found prussic acid in sorghum.

Dr. Davis: In 1899, in Illinois, we had a lot of supposed cornstalk disease and it occurred after two weeks in the field; horses were affected and showed symptoms of cerebro-spinal meningitis.

Dr. Craig: That's the form it takes in the West. It is not from germs, but toxic substance; sorghum stunted or second growth will show prussic acid.

Dr. Archer: Would curing have any effect on the prussic acid formation?

Dr. Craig: No; it's the peculiarity of growth of sorghum that has to do with the formation.

Meeting adjourned at 1.15 P. M.

E. M. BRONSON, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The February meeting was called to order at 8.30 P. M. on the 6th, in the lecture-room of the New York-American Veterinary College, with the President, Dr. Roscoe R. Bell, presiding.

That the program for the meeting was sufficiently attractive was well evidenced by the large number of members and visitors who were present. Among the out-of-town veterinarians were Drs. Pearson and Weber, Pennsylvania; Loblein, New Jersey; Hollingworth, Utica, N. Y.; Devine, Goshen, N. Y.

The President called for Dr. Silkman's paper on "The Diagnosis of Glanders in the Human Subject, from the Viewpoint of a Veterinarian," which was presented by Dr. Gill. This paper proved to be a very carefully prepared, complete and thoroughly scientific contribution. Dr. Silkman, as Veterinarian to the New York City Board of Health, has had excellent opportunities to study this disease; and that he has improved these facilities was evidenced by the efficient way in which the matter was presented. The Doctor produced an abundance of evidence to prove his contention that the disease of glanders in man was more prevalent than is generally supposed, and that the condition has undoubtedly been confounded with other diseases, as typhoid fever, and general pyemia. It is hoped that Dr. Silkman will give wide publicity to this paper, so that those who were not fortunate enough to be present at our meeting, will have an opportunity of reading it. [Dr. Silkman has promised to furnish a copy to the REVIEW for publication.—*Editor.*]

Dr. Leonard Pearson, Dean of the Veterinary Department of the University of Pennsylvania, was next introduced. Dr. Pearson explained that he had come direct from Washington, where he had met with the "Commission on Meat Inspection," recently appointed by Secretary Wilson to consider the revision of the meat inspection regulations of the Department of Agriculture, and that this matter had taken more of his time than he had expected it would, therefore he had not prepared as finished a paper on "Milk Hygiene" as he would like to have

presented to this Association. Dr. Pearson gave an extended address upon this subject, showing his great familiarity with it, and it is doubtful if any one present felt that more could have been added even if the Doctor had been able to spend more time in preparation. He called our attention to numerous outbreaks of typhoid fever which he had recently investigated, and to the fact that in order to insure a good milk supply, real inspection should be made at the dairies. To illustrate this point, the Doctor cited a recent outbreak of typhoid fever in a localized section of Philadelphia, which was directly traced to a contaminated spring in which the milk cans on a dairy farm were washed. This outbreak could have been avoided if the proper inspection had been carried out. Dr. Pearson also spoke on the advantages and disadvantages of pasteurization of milk. He contended that a high bacterial count in milk is not a sound indication that the milk is an unwholesome food, or that milk of a low bacterial count is necessarily pure and harmless. He pointed out that the former might contain a great number of harmless or non-pathogenic bacteria, while the latter might contain few but highly virulent ones. He believed that competent dairy inspection offered the best solution of the milk problem. That Dr. Pearson's remarks were greatly appreciated was apparent by the close attention given throughout the entire address.

Dr. Hollingworth, of Utica, and Dr. Ackerman discussed the subject. Dr. Pearson responded to several questions asked by members present.

Dr. Mangan's case report on the "Agglutination Test for Glanders," with post-mortem and pathological findings by Dr. Blair, was next called for. This proved to be a very interesting case, and, notwithstanding the lateness of the hour, this paper precipitated a lively and interesting discussion, Drs. Gill, Berns, Kingston, Silkman, Mangan and others taking part. Dr. Gill produced the records of twelve cases which were subjected to mallein and also to the agglutination test, and which were later autopsied, showing in these cases that mallein was apparently a more reliable agent in the diagnosis of glanders than was the agglutination method.

Dr. Gill then presented the dog with a peculiar lesion of the iris, which was examined by many of the members. While the light facilities for examination were not good, it appeared from a cursory inspection that the dog, which is a toy bull terrier, fourteen years old, has progressive senile cataracts of both eyes,

and in dilating the pupil to the full extent in order to take in all the light possible, the pigment layer upon the posterior face of the iris has broken away from the margin at several points, permitting the gray lens to show through these openings.

The matter of the revision of our Constitution and By-Laws was brought up. It was pointed out that our Constitution might advantageously be much broadened in its scope. On motion, duly seconded and carried, the President was instructed to appoint a committee to revise the Constitution and By-Laws and report at the next meeting. The President appointed Drs. Mangan and Blair on this committee.

Drs. Clayton and Robertson, as a committee on resolutions, offered the following resolutions on the death of Dr. Arthur O'Shea, one of the Association's charter members:

"WHEREAS, It has pleased the Almighty to remove from our midst our late worthy and esteemed fellow-member, Dr. Arthur O'Shea; and

"WHEREAS, The relations long held by the deceased with the members of this Association render it proper that we should place upon our record our appreciation of him as a veterinarian, and his merits as a man; therefore,

"*Resolved*, That the very sad and sudden removal of such a man leaves a vacancy that will be deeply realized by the members of the profession, and that we deplore the loss of Dr. Arthur O'Shea, with deep feelings of regret; and be it

"*Resolved*, That this resolution be spread in full upon the records of this Association and a copy forwarded to the AMERICAN VETERINARY REVIEW for publication.

[Signed] Chas. E. Clayton, J. L. Robertson, } *Committee.*"

President Bell announced as a part of the program for the March meeting, a paper by Dr. Hollingworth, of Utica, on the subject, "What is Necessary to be Done to Improve Dairy Inspection in New York State?" a paper by Dr. G. H. Berns on the "Bayer Operation for Cartilaginous Quittor," and one by Dr. E. A. A. Grange on "Artificial Impregnation in Animals."

Dr. Richard H. Kingston was elected to membership.

The meeting adjourned at 11.30 P. M.

W. REID BLAIR, *Secretary.*

GEORGIA STATE VETERINARY ASSOCIATION.

The first regular semi-annual meeting was held in the Convention Parlor of the Kimball House, Atlanta, on December 21,

1906, being called to order at 3 P. M., by the President, Dr. Peter F. Bahnsen, of Americus. The following other members were present: Dr. T. E. Jago, Athens; Dr. W. A. Scott, Columbus; Dr. C. R. Jolly, Dr. H. C. Carnes, Dr. C. D. Coker, and Dr. A. C. Seacord, all of Atlanta; Dr. J. E. Miller, Gainesville; Prof. C. L. Willoughby, Experiment, Secretary.

The minutes of the organization meeting, October 17, were read and approved, after which the presidential address was delivered by Dr. Bahnsen, outlining the needs of the profession in Georgia, and giving much encouragement to members.

Upon report made by the Membership Committee and unanimous vote of the Association, five new members were admitted, as follows: Dr. J. R. Anderson, M. D. C., Macon, (Chicago, 1889); Dr. M. A. Morris, D. V. S., Savannah, (American, 1890); Dr. J. Homer Oliphant, M. D. C., Augusta, (Chicago, 1897); Dr. Edw. L. Fryer, Jr., V. S., Blakeley, (Ontario, 1902); and Dr. J. C. Schwencke, V. S., Thomasville, (Copenhagen, 1894). Drs. Fryer and Schwencke were present at the meeting and took part in the work, and also Dr. Chas. F. Dawson, State Veterinarian of Florida, from Jacksonville, by invitation of the Association.

The first report was on "Osteoporosis," by Dr. T. E. Jago, of Athens, who stated as his experience that the most satisfactory treatment was to turn subjects in pasture, and also doubted the prevalent idea that this disease was caused by deficiency of mineral salts in the food. The subject was earnestly discussed by nearly all members present, particularly Drs. Jolly and Dawson, the latter advancing the hypothesis that the disease may be due to bacteria and contagious. So much interest was shown that the discussion culminated in the appointment of Dr. A. C. Seacord, of Atlanta, as committeeman to collect records of cases and treatment from members and other sources, and make report of statistics at the next meeting.

Dr. W. A. Scott, of Columbus, read a paper on "Surgical Cleanliness and Antiseptics," advocating the suturing of wounds when possible, and attempt to secure healing by first intention. Some discussion followed, the experience of other members being that it was best to treat cuts as open wounds without sutures, securing healing by granulation.

Dr. P. F. Bahnsen took the floor, to read a paper on the subject of "Periodic Ophthalmia," reviewing the history and recent treatments of this disease. A recess was taken for supper until 8 P. M.

Upon assembling in the evening, with the members and

several visitors present, the first paper was by Dr. C. F. Dawson, of Jacksonville, Fla., on the subject of "The State Veterinarian; What He Is, and What He Ought To Be," giving the usual duties of such work and some personal experiences of the writer.

Capt. R. F. Wright, Assistant Commissioner of the Georgia State Department of Agriculture, an honorary member of the Association, spoke further on the needs of Georgia in protecting the health of live stock, and assured the support of his department in securing proper legislation.

Motion was passed for the appointment of a committee to prepare and take charge of needed legislation before the next General Assembly, and the committee was named as follows: Dr. H. C. Carnes, Atlanta (chairman), Dr. W. A. Scott, Columbus, and Dr. T. E. Jago, Athens, with the President and Secretary to act with the committee *ex-officio*.

A paper on "Tetanus," by Dr. W. E. Carnes, of Atlanta, was read by the Secretary, on account of the author being confined to bed at the time with a severe ankle sprain caused by a fall. From the discussion of the members, the majority seemed of the opinion that rest and quiet aided as much in the treatment of this disease as any medical treatment.

The Association adjourned for the day.

The session of the second day, December 22, was begun by a meeting of the Committee on Legislation in the State Capitol, for conference with the Commissioner of Agriculture, at which a law was framed to be presented at the summer session of the Legislature, providing for the appointment of a regular State Veterinarian, and defining his duties. It was also considered likely that a bill regulating the practice of veterinary medicine and creating an examining board might be introduced at the same time.

At 10 A. M. all members gathered at the hospital and stables of Dr. C. R. Jolly, at 15 Exchange Place, Atlanta, for clinical practice.

At noon the party repaired to the hospital of Drs. Carnes and Carnes, at 135 Marietta Street, where a number of other cases were presented for diagnosis and treatment.

At 2 P. M. the party attended dinner at the Manhattan Café, and between 3 and 4 P. M. assembled again in the Convention Room at the Kimball House. Motion was adopted to have the next meeting of the Association about July 4th, upon call of the President, to be held in Atlanta at such time as the Associa-

tion might assist with work before the Legislature. Resolutions of thanks for the help and advice of Dr. Dawson were passed, and Dr. Dawson voted an honorary member of the Association. Resolution of sympathy and condolence was passed referring to the accident to the Vice-President, Dr. W. E. Carnes.

At 4 P. M. the Association adjourned, and members dispersed on the afternoon trains for their homes, pronouncing the meeting highly successful and interesting, very profitable from interchange of views and experiences.

C. L. WILLOUGHBY, *Secretary.*

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

The tenth annual meeting was held in Masonic Temple, Rochester, N. Y., Thursday, Jan. 17, 1907, and was called to order at 11 o'clock. The following members responded to the roll-call: Drs. L. R. Webber, W. G. Dodds, O. B. French, J. H. Taylor, P. J. Johnson, A. Geo. Tegg, G. C. Kesler, Nelson N. Lefler, D. P. Webster, John Steiner, Warren E. Stocking, W. J. Payne, J. E. Smith, W. H. Salisbury, Carl Webber, F. D. Holford, H. S. Beebe, John W. Corrigan, William F. Woolston and Prof. W. L. Williams (honorary member). Visitors: Drs. W. L. Baker, Buffalo; William H. Mahony, Rochester; W. J. Johnston, Geneva.

After the routine business had been transacted, the following directors were elected: Drs. Beebe, Stocking, Tegg, Kesler, Payne, French, Webster, Taylor, Dodds, and Corrigan.

The following officers were elected:

President—Warren E. Stocking.

Vice-President—John W. Corrigan.

Secretary—J. H. Taylor.

Treasurer—A. Geo. Tegg.

The Treasurer reported cash on hand $93 93. The Secretary reported a membership of twenty-four in good standing, and the following were elected members: John O. Moore, Wilson; W. J. Johnston, Geneva; William H. Mahony, Rochester, and Newell D. Backus, Geneva.

The meeting then adjourned to the Rochester Club, where a dinner was given by the Association to all in attendance on the meeting.

The meeting was again called to order at 3 o'clock.

Dr. A. Geo. Tegg gave a very interesting talk on "Acute

Lymphangitis." Where the fever was high he had gotten unfavorable results from the use of cathartics, especially aloes; got best results from complete rest with the use of aconite, digitalis, nitrate of potash, with cooling lotions locally. Prof. Williams thought that, while we need not look for immediate results from the administration of aloes as a purgative, eserine and pilocarpine, which act immediately instead of to-morrow, would give good results. In his experience most of the cases resulted from an infected wound, which would require different treatment. There seemed to be a great difference of opinion in regard to the etiology of the disease, some claiming most of the cases are due to infection, others claiming the cause as derangement of the digestive apparatus, others to a debilitated condition of the system arising from and coming as a sequel to some febrile disease. All of this seemed to point to the fact that all of these cases can and do cause lymphangitis.

Dr. Warren E. Stocking then read a very interesting paper on the "Contagious Fevers of the Horse," giving a history of the different forms, tracing back several centuries. Here, too, there seemed to be great confusion, the members practicing in the city seeming to think all of the different forms and types are due to the same etiological factor, the different forms being produced by the influence of environment; while the men who practice in the country away from the horse markets recognize four distinct diseases or types. Prof. Williams had had both city and country practice; he had recognized the four types very distinctly in his country practice, but in the cities, especially along the line of horse markets, he found a mixed infection, which he very aptly termed "inflammatory hash." This paper brought out a spirited discussion, which had to be cut short at 5 o'clock to allow the members to catch their trains.

J. H. TAYLOR, *Secretary.*

KANSAS STATE VETERINARY MEDICAL ASSOCIATION.

The third annual meeting was held in Topeka, January 8–9, and there was a large attendance, while interest in the affairs of the profession was manifest. The session of Tuesday afternoon was pronounced the most interesting in the history of the Association. The old officers were all reëlected by acclamation. The Secretary objected to the policy of letting one set of members receive all the honors. But still, we all promised to do the

best we know for the welfare of the Association, and sincerely hope each member will cheerfully respond when called upon, thus helping the Secretary to keep up the high standard of the Association thus far attained.

After going through the regular business, a very interesting program was rendered. A committee on resolutions was appointed to draft a resolution and present it to the State Board of Health.

A short clinic was held at the hospital of Drs. Pritchard and Knisely, at 1117–1119 Kansas Avenue. The following cases were looked after:

1. Operation on gray horse for catarrh; trephining of superior maxillary sinus. Operation by Dr. H. S. Maxwell, of Salina.

2. Two mouths were "dressed" by power float by Dr. D. O. Knisely.

3. Subject for diagnosis: bay horse, partially paralyzed; no history to case. Diagnosis: result following malarial fever.

4. Subject for operation, but found to be merely a small suppurating point on inside quarter at the coronary band.

5. Acute indigestion. Passage of the stomach tube by Drs. Pritchard and Knisely. Results were good; animal placed in box stall; no medicinal treatment given.

6. Case of colic. One dose of eucalyptolin, ℥ ss, was given.

7. Subject shown where rumenotomy had been performed the day previous; subject doing nicely, and apparently no bad symptoms at all.

8. Operation for melanotic tumor on gray mare. Removal of tumor and dressed as an ordinary wound.

9. Mouth "dressed" with power float by Dr. Flanders, of Kansas City, Kansas.

WEDNESDAY AFTERNOON MEETING.

Dr. Rogers, of the Manhattan Veterinary College, and Dr. Kinsley, of the Kansas City Veterinary College, lead a very interesting discussion on tuberculosis, which brought out some valuable information.

Dr. Hobs, of Holton, reported a case of tetanus following nail puncture.

Dr. Frank McVeigh, of Kincaid, read a paper on "Castration," which brought out a lengthy discussion by Drs. Pritchard, Saunders, Burns, Maxwell, and Richards.

Dr. DeWolf reported a very interesting case of peritonitis.

Dr. Kinsley gave an entertaining talk on the differential diagnosis of lamenesses, which brought out a very animated discussion by Drs. Hadley, Maxwell, Kinsley, Pritchard, Richards, and Knisely.

Dr. Hadley reported a case of canker in the foot of a driving mare. Discussed by Drs. Knisely, Pritchard and Kinsley.

Dr. Kinsley, of the K. C. V. C., was very urgent with his request for the members to attend the Missouri Valley meeting at Kansas City, in February. He was promised a very large attendance, which we are anxious to see.

Dr. Schoenleber, State Veterinarian of Kansas and instructor at the Manhattan Veterinary College, was right on the floor at the right time asking for the fourth annual meeting to be held in Manhattan. A motion to that effect was made by Dr. Maxwell, and was unanimously carried. Schoenleber promised us something on the "Jumbo" order if we would acquiesce. So now, gentlemen, make ready for something grand in January, 1908, at Manhattan. HUGH S. MAXWELL, *Secretary.*

ALPHA PSI FRATERNITY.

Greek letter Fraternity, recently established, is already national in its scope.

Students of the College of Veterinary Medicine of the Ohio State University have perfected the organization of a National Veterinary Fraternity, to which only veterinary students are eligible to active membership, and alumni and men prominent in the profession to honorary membership.

The purpose of this fraternity is to promote a stronger bond between the veterinary colleges of the United States and Canada; to create a better feeling among the students of all veterinary colleges, and to infuse a deeper interest in the study of veterinary medicine.

The Alpha Chapter has been established at the Ohio State University, and the Veterinary Faculty, Dean White, Drs. Sisson, Brumley, Udall, Fitzgerald and Gay were received as honorary members.

Inaugural and formal installation ceremonies took place Friday night, Jan. 18th, followed by a banquet at the Northern Hotel.

The members of the National Council are S. W. Brown, President; A. F. Schalk, Vice-President; L. M. Steckel, Secretary; G. W. Gillie, Treasurer. LEO M. STECKEL, *Secretary.*

NORTH DAKOTA VETERINARY ASSOCIATION.

The annual meeting convened in the recitation room of the Veterinary Department of the Agricultural College at Fargo, January 15, 1907, when the following members responded to the roll-call :—J. Burton, Wheaton, Minn.; J. B. Campbell, Larimore, N. D.; W. F. Crewe, Devil's Lake, N. D.; E. J. Davidson, Grand Forks, N. D.; J. M. Douglas, Hendrum, Minn.; J. W. Dunham, Fargo, N. D.; D. Fisher, Grandin, N. D.; G. D. Fisher, Hope, N. D.; W. J. Grady, Hendrum, Minn.; C. H. Martin, Valley City, N. D.; S. P. Smith, Cando, N. D.; W. S. Stinson, Grafton, N. D.; B. C. Taylor, Hillsboro, N. D.; L. Van Es, Agricultural College, N. D.; A. A. Walker, Casselton, N. D.

Visitors :—Drs. Ward, Beebe and Donaldson, Minnesota; Dr. M. Holcomb, Fargo, N. D., and Dr. Glynn, of the B. A. I.

The reports of the following committees were read and adopted: Resolutions, Program, Prosecutions, Legislation and Finance.

A communication from Dr. Sylvester, of the State Examining Board, was read, giving an account of the improved condition of the Board since its reorganization.

The names of Dr. F. L. Cussock, Carrington, N. D., and of Dr. W. S. Stinson, Grafton, N. D., were presented for membership, and were unanimously elected.

Dr. Walker called attention to the inadequacy of the present sanitary laws and elicited a general discussion of the subject, by which it became apparent that all members fully agreed on the great need of better sanitary measures. As a result of the discussion a committee, consisting of Drs. J. W. Robinson, R. H. Treacy, and A. A. Walker, was appointed and instructed to make the required efforts to secure the passage of a bill providing for the establishment of a State Live Stock Sanitary Board.

Dr. Van Es made a motion, seconded by Dr. D. Fisher, that a committee be appointed to submit suitable resolutions on the occasion of the death of Professor Thomassen, of Utrecht. The motion carried, and as members of this committee were appointed Drs. Van Es, Crewe, and Walker.

The following were the officers elected for the ensuing year:

President—W. F. Crewe, Devil's Lake.

Vice President—A. A. Walker, Casselton.

Secretary—C. H. Martin, Valley City.

Treasurer—B. C. Taylor, Hillsboro.

The following papers were read:

"Treatment of Fistulous Withers and Poll-Evil," by G. D. Fisher, Hope, N. D. Discussion by Drs. Martin, Crewe, Walker, Davidson and Van Es.

"Municipal Meat and Milk Inspection," by Dr. J. W. Dunham, Fargo. Discussed by all members present.

"Cerebro-spinal Meningitis," by Dr. C. H. Martin, Valley City. Discussed by all present.

"Swamp Fever," by Dr. E. J. Davidson, Grand Forks. Discussed by Drs. Van Es, Ward and Beebe, and supplemented by an exhibition of photographs and clinical charts by Dr. Van Es.

After the reading of the papers, Dr. Van Es discussed the tuberculin and mallein tests and their relation to veterinary practice. He pointed out the desirability of a uniform method of applying the tests and interpreting the results, and spoke of the advisability of a uniform schedule of fees for the work. This topic was thoroughly discussed by Drs. Ward, Stinson, Walker and Davidson, and as a result the appointment of two committees was authorized, one to formulate methods of testing and interpreting and another to draw a schedule of fees for this work.

The meeting then adjourned until the following day after the clinics.

The clinics were held at the Stock-Judging Pavilion of the Agricultural College, and the following cases were presented:

Removal of keloid, by Dr. S. P. Smith.

Cunean tenotomy and cautery for spavin, by Dr. Van Es.

Operation for poll-evil, by Dr. Fisher.

Cautery for tendo-vaginitis, by Dr. H. Martin.

Plantar neurectomy, by Dr. Van Es.

Exhibition of locomotor ataxia, of suppurating bursa of fetlock, and of several cases of spavins, etc.

After the clinics the meeting was again called to order, with Dr. Crewe in the chair.

Dr. S. P. Smith read an interesting paper on a report of an operation on an hermaphrodite, which was discussed by all members present.

Dr. Smith also exhibited a tooth which he removed from the base of the ear of a colt and reported on the method of operation and its favorable results.

After a spirited discussion on the methods of handling communicable diseases, the Legislative Committee was instructed

to keep the Association informed through the Secretary of the progress of the proposed Live Stock Sanitary Board Bill, so that the members may individually urge their representatives to support the measure.

At the recommendation of the Committee on Resolutions, the following resolutions were adopted on the death of Prof. Thomassen:

"WHEREAS, The sad intelligence of the death of Professor Dr. M. H. J. P. Thomassen has been conveyed to us, and

"WHEREAS, His distinguished services for the advancement and development of veterinary science and the veterinary profession have been of inestimable value to the world; and,

"WHEREAS, The American veterinary profession and agriculturists have been greatly benefited by his labors. Be it, therefore,

"*Resolved*, That the North Dakota Veterinary Association express its sorrow at the occasion of this irreparable loss; and be it further

"*Resolved*, That these resolutions be spread upon the minutes of this Association, and that a copy thereof be forwarded to the bereaved family."

The following committees were then announced by President Crewe:

Finance—Smith, D. Fisher, and Stinson.

Program—Van Es, Campbell, and Martin.

Rules for the Use of Mallein and Tuberculin—Van Es, Davidson, and Dunham.

Fees for Mallein and Tuberculin Work—Stinson, Smith, and Campbell.

The meeting then adjourned. C. H. MARTIN, *Secretary*.

CENTRAL CANADA VETERINARY ASSOCIATION.

The fifth annual meeting was held at the Carnegie Library, Ottawa, on Monday, February 4th, 1907, at 8.30 P. M.

Present:—Drs. Rutherford, Higgins, Hilton, Harris, McNab, Hollingsworth, S. A. Walsh, Marshall, Beach, Higginson, Telmosse, Kenning, McGuire, Thacker, Haworth, Labrosse, Pallister, Lynche, Monk, Hadwen, McGill, James, and Young.

The minutes of previous meetings were adopted.

Dr. Dufresne (Laval '91) and Dr. F. A. Walsh (Ontario '06) were elected to membership.

The Secretary then read a letter received from Professor Williams *re* the *Veterinary Journal*.

The President then stated that it was the fifth annual meeting of the Association and that he was glad to welcome all present. The main object of the Association was, he said, to elevate the veterinary profession. He felt safe in saying that one of the most important subjects which would be touched on that night would be the good news in regard to veterinary legislation from Dr. Rutherford. The live-stock interests of the country were expanding, and much depended on the veterinarian. The transcontinental roads under construction, the lumbering in the country, and the immigration in the West, all created a great demand for horses, to say nothing of local demands, and that, therefore, times were prosperous. As veterinarians, they should devote much time to the judging of live stock, so that, when called upon, they could talk about judging, breeds, etc. He wished to thank all those to whose aid and coöperation the success of the meeting was due, particularly to their Hon. President, Dr. Rutherford, for his untiring and unselfish efforts to elevate the profession in Canada.

Dr. Rutherford then stated that it afforded him a very considerable degree of pleasure to be among them that evening, especially in view of the fact that, on the occasion of last year's annual meeting, he was seriously considering the advisability of becoming the occupant of a very limited block of real estate, something about six feet by two. However, owing to the earnest prayers of his friends, he had succeeded in pulling through so far. He supposed that those present were more interested in veterinary education than in any other subject. While he had to thank them very heartily for their kind motion of last year, he was also very grateful to them this year for antedating their meeting twice to meet the exigencies of his departmental work.

The matter of veterinary education, as dealt with that night, was left at the point where he had gone to Toronto on January 25th of last year, going a day or two earlier on his way South, to keep an appointment with Mr. J. W. Flavelle, the Chairman of the Committee appointed by the Ontario Government, to discuss matters in connection with the Ontario Veterinary College. At the meeting which resulted, Mr. Flavelle was present, as also Mr. Kilgour and Mr. C. C. James, the Deputy Minister of Agriculture, and he explained to them, as most present had heard him explain, the seriousness of the situation as far as it regarded the education of veterinarians in Canada, and the urgent necessity which, in his opinion, existed for some effective action being taken. The interview lasted some three hours, and dur-

ing that three hours Mr. Flavelle asked a number of questions which he did his best to answer; they went over the ground pretty thoroughly, with the result that, when Mr. Flavelle brought in, as Chairman, the report of the University Commission, they recommended that the Government should take over the College. They were all aware that they had a meeting in the fall of 1905, and waited upon the Hon. Nelson Monteith, that the Reorganization Committee, accompanied by Professor Smith himself, waited upon the Hon. Nelson Monteith. Previous to that, in June, 1905, he had taken the opportunity of having an interview with Mr. Monteith, so that he was fairly well prepared for the report of the Mr. Flavelle and his colleagues, and also fairly well prepared to take over the College. "Those of you who know Professor Smith, know that he does not like to be hurried, and he is going very slowly and deliberately. There is a little difference between him and the Government as to the price which he thinks the Government should pay him, and he is hanging fire, as it were. Those of you who have received the announcement of the College will know that there is at last the long looked for statement that students will have to go in for a three years' course. The Government is going to take the College over on about May 1st, 1908. Students who went in this year will be allowed to graduate as heretofore in two years. Students next fall, while going in under the auspices of Professor Smith and the present management of the College, will be entered for three years, whereas if the present arrangement is carried out, and I have not the slightest doubt that it will be, in 1908 they will have to pass a pretty strict matriculation, and would go through College in three years' graded courses laid down by the new Board appointed by the Department. The College will at that time be conducted as is the Agricultural College, that is, properly and regularly affiliated with the University. There is also a proposition that, in addition to the ordinary diploma, which will be given to the student who passes his different examinations, there will be further a University degree given for those who take another year, which I deem a very proper thing. I was a little disappointed at having to wait so long, after having, as it were, won the fight and seen the daystar spring from on high, that we would have to wait until 1908; but, after all, when I look to the time when I graduated in 1879, and remember that I had been waiting for improvement ever since, I thought that perhaps it was not so long after all, and that we should be thankful for small mercies.

"I have also another subject for congratulation. You will recollect that, some years ago, we had a meeting of the A. V. M. A. After a great deal of hustling to entertain our American cousins, and after paying all our debts, we had $109.50 left. It occurred to me that it would be a very nice little nest egg upon which to base an appeal for funds to the profession. When the troubles of the Committee who had collected the money were over, it was decided to hand it to the Ontario Veterinary Association, and at a meeting in Christmas, 1903, this was done. Ever since then the money has been accumulating. We had $650 in the Savings Bank drawing interest. We do not need it now for the purpose originally intended. Circumstances have rendered it unnecessary for us to take any action as private practitioners or as veterinarians generally, or through private members of the Legislature or in any other way. The Minister of Agriculture, the Hon. Nelson Monteith, himself has agreed to the Ontario Veterinary Association's demands and appreciates the importance of higher veterinary education, and to him we owe, I think, a debt of gratitude for the stand he has taken. I feel very much as I speak in this matter. We are relieved at once by the action of the Hon. Nelson Monteith, from any responsibility to secure legislation, and the various abortive measures which were previously obtained when this member and that sought to introduce bills to get legislation, and influence was brought to bear and lobbying was done, and the bills were thrown out. We will have a bill brought in by the Government itself. The College will be dealt with as a Government institution, and our little fund of $650 will therefore remain untouched. I may say that while the new Ontario Government deserves a certain amount of credit and consideration in connection with the subject on which I have been speaking, in other respects it has been less praiseworthy. Last year and the year before a person was elevated to the dignity of the veterinary profession by special Act of Parliament. The members of the veterinary profession did not appear to do anything, and last year when another man was made a veterinary surgeon by Act of Parliament there was the same thing. This year the same thing is going to be tried, and a man rejoicing in the name of Brisson, of the Township of Russell in the County of Russell, is petitioning the Legislature to be created a veterinary surgeon by special Act of Parliament. As soon as I received this information, and I may say that I knew nothing of the cases of last year and the year before, I notified our Secre-

tary here and I notified Dr. Sweetapple, the Secretary of the Ontario Veterinary Association. I have written several other letters, asked Dr. Sweetapple to take action immediately and call a meeting of the Reorganization Committee for this week. I received a letter to-day from him; he appears quite alive to the danger, but appears not to think it necessary to take such very prompt and energetic action as I suggested in my letter. I am going up to-night, and may be able to warm the Doctor up to-morrow morning and let him understand that we mean business.

"I have one thing more to lay before you, slightly different in character from those which have gone before, in relation to my Departmental work. Those of you who have received the various publications of our Branch will be in a position to know that we have not been idle: we have kept the pot boiling, and although it has occasionally boiled over in different parts of the country, we must expect a little trouble. We have had legislation before Parliament, the Meat Inspection Bill, which also provides for the inspection of vegetables, fruit and fish, but with those ingredients of the Irish stew we do not, as veterinarians, have much to do. We have no meat inspectors in Canada. As you know, it is best for a veterinarian to let the public think that there is nothing at all about animals that he does not know. You know how that is. Therefore, I speak plainly, and I may say that there are no meat inspectors in Canada that I know of. There may be here and there a veterinarian who has been a meat inspector. If so, I don't know him, and I know the great majority of the veterinarians in this country. There is a provision in this Act calling for an examination, which will be provided by the Governor in Council, but as he is liable to be busy, some of the rest of us will have something to do with the preparation of the examination papers. We are going to have an examination, and no man can be appointed an inspector under the Act without passing that. In order to enable veterinarians to pass that examination, it will be necessary for them to study. From forty to fifty meat inspectors will be required very shortly. We have, as you know, a very large staff of veterinarians engaged in dealing with outbreaks of contagious disease. In the last year we have sprung some. Five years ago we spent some sixty thousand dollars, while in the last fiscal year I got away with some four hundred and sixty-five thousand dollars of your money, and then was a little short. The work has very largely increased all over the country. These men, as you know, have

been appointed without examination, but after the new Meat Inspection Bill comes into force, I am inclined to think that the only way in which men will be able to enter the service of the Department will be through the examination provided by the Bill. The reason for that is this: When we engage men for service in the Department we do not propose to use them for any service for which they may be liable to be called on. When we start demanding an examination we will stick to it. I realize that there would be considerable difficulty in getting anything like the number of inspectors we want, properly trained in time. The salaries that we propose to pay are not large enough to tempt a man of mature years who has got himself established in practice and is in comfortable circumstances. They are, however, quite big enough and quite good enough for young men leaving college, especially if single, and would enable him to put by a little to start himself in practice later on. We propose to pay about $1200, and of course those salaries will be increased as the inspectors develop a knowledge and aptitude for their duties. The need of veterinary services in the inspection of food is constantly increasing throughout the civilized world. I may say that I have advocated for the last three or four years, the advisability of making provision for meat inspection, in view of the large and constantly increasing meat trade. You know it requires a good deal to move a Government, and until 'The Jungle' came along, as also the excitement in Chicago, and affected the trade for canned meat in England and Europe, the Government of Canada did not realize that it was necessary to take some action in the matter. Even then it was felt for a considerable time by those in control that we did not require it in Canada; our people were so thoroughly good and honest and careful of the health and well-being of their fellow creatures throughout the world, that there was little danger of diseased meat, or decomposed meat, or anything of that kind being packed in Canada. However, we began to find things not so good as they were supposed to be, with the result that the Meat Inspection Bill was introduced. It was introduced in December, and has now passed its third reading, and is going before the Senate in a day or two. We have no meat inspectors yet. As soon as I realized that we were really in for it, I took the matter up with Professor Smith, and endeavored by all the means in my power to get him to inaugurate a course of meat inspection through January, February and March. I also talked to the young men, pointing out the importance to

the Department and to the profession; but, while they agreed that it was important to the Department and to the profession, as also to them, I have not been able to get an answer. I have hopes. I am going up to-night, and may be able to get matters started in Toronto as early as possible and lasting as long as circumstances will permit. This course would be available for old graduates as well as those now at the College, and any veterinarian who feels like going in for a special course of meat inspection might, I think, be able to fit himself for the position of meat inspector; taking the examination, say in April or May next, and being appointed on his succeeding in passing. Any graduate of a recognized veterinary college can take the examination. I thought that I would bring this before this meeting so that there might be no misapprehension, and I will be glad to give any gentleman who may think of going in for the examination as much information as I possibly can liable to be of use to him. I have said all that I think I have to say, and unless anyone has any questions, I will now take my seat."

Mr. Young: You said that there was some six or seven hundred dollars that you were holding. What is to be done with it? I have subscribed to the fund, and if it were divided, should expect to get my share.

Dr. Rutherford: I think that, after everything is settled, and everything started, we should endeavor to make it up to one thousand dollars and establish a little scholarship at the College with it. Neither Mr. Young nor anyone else is hurt by the little which they contributed, and it would be very nice for the veterinarians of the Province to say: "Here are sixty or seventy dollars which would help a good student along and enable him to fit himself for the profession." It is only a small matter after all, and hardly worth while dividing it. I think the postage in such a case would take up quite a bit.

The President: I suppose, as a general practitioner, you would have to give that up entirely.

Dr. Rutherford: Oh, yes, not only in connection with meat inspection, but we are not now appointing veterinary inspectors who are private practitioners. The moment he becomes an inspector he has to give up his work. I refer, of course, to salaried inspectors. We have gentlemen like Dr. McGuire, or Dr. James, or Dr. Hollingsworth, as inspectors, who are paid only by fees, but when a man enters our salaried list, he has got to abandon his practice and become a public servant. Paying a salary to a practitioner is not advisable

either from a departmental or a professional point of view. We therefore take men entirely from practice, and if an inspector studies and looks up the specialties he has to deal with in the course of his work, his salary very soon begins to increase, and his services are recognized. We have quit entirely appointing practitioners, but we do not dismiss those we already have. We have a few relics of the old days which we do not dismiss, but we do not want any more.

Dr. Harris: I am sure, Mr. President and gentlemen, you have all listened very closely to what Dr. Rutherford has told you in regard to what has taken place—that is, about the Ontario Government taking over the College and establishing it on a better foundation. There is no doubt that Dr. Rutherford has done a great deal for the veterinarian in Canada (hear, hear), and I do not know any man who has done as much. He was not only the means of establishing the C. C. V. A., but was the means of bringing the Ontario Veterinary Association to life. I am sure, therefore, that there is no other man in Canada who could have done as much as Dr. Rutherford has. He has done it for the benefit of the practitioner. He is not depending upon practice now, and has helped to bring the profession together, and to bring it to the standing which it now has. I would like to move that a very hearty vote of thanks be tendered to Dr. Rutherford by this Association, for what he has done for the veterinary profession in Canada, and particularly for this Association. Seconded by Dr. Lynche. Carried.

Dr. Rutherford: I am sure I thank you very kindly for this freely expressed good will, and can only say that my efforts have been but a labor of love. I have never been anything else but a veterinarian, except for a short period of mental aberration, when I thought that I was likely to blossom forth as a statesman, a condition from which I shortly recovered. I have never been anything else, and for twenty-two years I was a veterinary practitioner, and therefore know the difficulties and troubles and hardships of a veterinarian, and that his lot is capable of a great deal of improvement. It has not been favorable in Canada, in fact very unfavorable. I think we are about to better it; I hope we are, I trust we are, and if I have been in the slightest degree instrumental in bringing about a better condition of affairs, as I said before, I am perfectly satisfied. At the same time, I thank you very sincerely for your kind expression.

The Secretary then read his reply to the letter received from

Professor Williams, as also a letter received from Dr. Roscoe Bell. He also stated that Dr. Rutherford had informed him that two members of the Dominion Parliament were veterinarians. He thereupon wrote to these gentlemen (Messrs. Walsh and Boyer), inviting them to the meeting. He had received no reply from Dr. Walsh, but a cordial letter of acceptance from Dr. Boyer (read). The Secretary then read a letter received from Dr. Rutherford in regard to the application of J. Brisson to be created a veterinary surgeon by Act of Parliament, on receipt of which he had written to Dr. Labrosse for formation.

A letter of regret was also read from Dr. Massie.

Dr. Higgins, dealing with the Brisson case, stated that he had met that gentleman a few times, that he was a farmer in the Township and County of Russell, running a farm there, besides doing a little in the lumber business. He had been "quacking it" ever since he knew him. As far as his character was concerned, he is a good enough citizen. He has no qualifications. He understood that Brisson told several people that he had graduated at some American college, but he was certain that he had not. He was only away on the American side for a short time, a few months, and I am sure he could not have graduated in that time.

Dr. Labrosse stated that he had not met "Professor" Brisson. He had heard of him. He had some kind of an advertisement in which he styles himself "Professor." He knew nothing about his qualifications. He had a brother practicing medicine near him and he had told him that he (Brisson) did not know the first thing about medicine. He was simply a quack and nothing else; he had one word for everything, *i. e.*, inflammation in the summer and pneumonia in the winter. He knew nothing about his character. It would certainly not be advisable to permit him to carry his project through.

Dr. Rutherford stated that it was an easy matter to have a very strong resolution passed that night protesting against any such abuse of the prerogative of Parliament, as is implied in such a proceeding as this in a civilized country, and it was simply ridiculous to be made a veterinary surgeon by an Act of the Legislature. The resolution should be sent to the Provincial Secretary, as also to the Minister of Agriculture, so as to impress upon them the necessity for action. A far better way of dealing with a matter of this kind was for each and every man to sit down and write a strong personal letter to his Member in the Legislature, protesting against such action, and to get all

other veterinarians of his acquaintance to do the same. He himself had represented the people for ten years, and this was just about one of the most effective ways of stopping a thing of this kind that is possible. They should insist on an answer, so that you can know his stand in regard to the matter. If he did not answer in a week, write again, and get your friends to do the same. This thing has got to be stopped. There had been one in 1905, one in 1906, and then this one. If they did not protest, who would? The curse of the veterinary profession had been a lack of unity. He was going to write to his member, and wanted them to do so too, and to send a strong resolution to the Provincial Secretary.

A committee of three was appointed to draw up the resolution, the committee consisting of Drs. Higgins, Hollingsworth, and the President; the Secretary also to be included.

Dr. Rutherford was reappointed Hon. President; and Dr. Thacker President. The Secretary announced that it was his intention to resign his position, giving reasons therefor. He was, however, prevailed upon to accept. Dr. Hollingsworth was reappointed Vice-President.

Dr. Haworth drew the attention of the meeting to a press clipping in regard to the Report of the Royal Commission in regard to Tuberculosis, which was read by the Secretary.

Dr. Rutherford then informed the meeting that there was good accommodation for a clinic at the Tuberculosis Experiment Station, privacy was assured, and they would be free from the unauthorized audience of last year. Dr. Higgins was appointed official reporter.

The old Council was reappointed for the ensuing year, and Drs. Marshall and Kenning were appointed Auditors.

Dr. Higgins' name was added to the Council for the ensuing year.

The Auditors' report was then read and adopted.

There was an intermission of ten minutes to enable members to pay their dues, after which, the Secretary informed the meeting that there was an application for membership from Mr. A. R. Walsh, of Perth, who was a graduate of the O. V. C. '06, vouched for by Drs. James and Thacker, and it was accepted.

Dr. Haworth then read an interesting paper on "Azoturia," after which Drs. James, Harris Lynche, Hilton, Hollingsworth and Thacker took part in the discussion thereon.

Dr. Higgins informed the meeting that he had no paper to read, but that he had a number of interesting things to show

them at the Biological Laboratory, and had therefore devoted his time to the work out there.

Dr. Hollingsworth then read an interesting paper on "Dental Terretoma," which was greeted with applause.

The Secretary read a letter from Dr. A. G. Young, of Merrickville, suggesting as a topic for discussion "If a stallion has pinkeye, what length of time afterwards is he a source of contagion?" In the discussion which followed, Drs. McGuire, Lynche, Labrosse, James, Thacker, Haworth, Hollingsworth and Higgins took part.

The Secretary read a letter from Dr. Young, of Almonte, suggesting as topics for discussion (1) "The treatment of Tetanus," and (2) "Is there a general-purpose horse?" In the discussion which followed, Drs. James, Young, McGuire, Higgins, Thacker, Haworth Lynche and Hilton took part.

Dr. McGuire then read an interesting paper on "Sanitary Water Supply for Stables," which was greeted with applause.

The Chairman then announced that the Association would meet the following morning at the Brunswick Hotel, at 9 A. M., where a bus would be in readiness to take members out to the Biological Laboratory.

The meeting then adjourned.

AT THE EXPERIMENTAL FARM.

On Tuesday, the new horse stable at the Experimental Farm was visited, where Mr. Grisdale explained the methods of ventilation installed, all of which can be operated independently for the determination of the most efficient, which will be indicated by experimental data.

At the Biological Laboratory, many pathological specimens were shown, the method of detection of sheep scab and trichina in pork were demonstrated, and trypanosomata of numerous varieties were seen both in stained and living preparations.

The Experimental Tubercular Herd on the Aylmer Road was inspected, and the pioneer work of Dr. Rutherford in dealing with this herd was highly endorsed by all present. It was a revelation to see calves playing about in an open yard (where they are kept day and night) and the temperature many points below the zero mark. No coughing was heard, a direct tribute to the practicability of the work and the effect of an abundance of fresh air and sunlight.

It was decided to hold the mid-summer meeting in Ottawa, and the Clinic at the quarters of the Experimental Tubercular

Herd, where exceptional facilities are obtainable, these being placed at the disposal of the Association by Dr. Rutherford.

A large attendance is expected at the Clinic, which will probably be held some time during July.

A. E. JAMES, *Secretary.*

VETERINARY ASSOCIATION OF THE DISTRICT OF COLUMBIA.

After ten years of unremitting effort the veterinary profession in Washington has succeeded in securing the enactment into law of a bill regulating the practice of veterinary medicine in the District of Columbia. The bill was signed by the President on February 1. In brief, it provides for the appointment of a board of examiners; describes the qualifications necessary for an applicant to apply for a license; provides for interstate reciprocity in veterinary licensure; exempts from examination veterinarians in the Army, in the employ of the Department of Agriculture, and regularly licensed veterinarians in actual consultation from other States; and provided such regulations as are necessary for the enforcement of the law.

The Veterinary Association of the District of Columbia, which was instrumental in securing this legislation, was requested by the District Commissioners to submit the names of ten veterinarians for consideration in connection with the selection of the examining board (which is to consist of five members). At a special meeting held on the 13th instant, the names of ten members of the Association were selected and were transmitted to the Commissioners, who will announce their selection shortly.

The meetings of the above-named Association are largely attended, and at the last regular meeting a very interesting and instructive paper on "Tuberculin; Its Use and Misuse," was read by Dr. J. P. Turner; resolutions recommending legislation in favor of a compulsory tuberculin test of all cows supplying milk for use in the District of Columbia were adopted, and other matters of interest were discussed.

F. M. ASHBAUGH, D. V. S., *Secretary.*

THE transport *Dix*, with over 500 head of stock, in charge of Dr. Levitt (Chicago, '06), called at Honolulu about Christmas. Dr. Monsarrat says in a letter that the stock was in excellent condition of health.

NEWS AND ITEMS.

DR. W. J. MCKINNEY, Brooklyn, N. Y., left for Hot Springs, Va., Feb. 14, to recuperate his health.

WARD GILTNER, D. V. M. (N. Y. S. V. C. '06) is assistant to Dr. C. A. Cary in the Veterinary Department of the Alabama Polytechnic Institute, Auburn, Ala.

DR. MONSARRAT, of Hawaii, who was so cordial in his invitation to the A. V. M. A. to hold the 1907 meeting at Honolulu, is out with the same enthusiasm for 1908.

DR. R. H. MCMULLEN, Veterinarian Bureau of Agriculture, Philippines, will shortly return to the United States, as the climate of the Archipelago does not agree with his health.

P. J. AXTELL, D. V. M., N. Y. S. V. C. '05, has removed from Deposit, N. Y., to Binghamton, where he has taken the practice of Dr. Garry T. Stone, who has taken a position with the Borden Condensed Milk Co.

DR. A. P. LUBACH, formerly of Long Branch, N. J., has taken a position with Dr. F. W. Porter, of Tampa, Florida, as assistant for the winter. He expects to return to Jersey City in the spring and resume his practice there.

DR. EBENEZER WATERS, the oldest veterinary practitioner in Brooklyn, N. Y., sustained serious injuries in January by being knocked down by a cab, and his leg badly bruised, which, on account of his advanced age, did not heal kindly.

DR. EMILIO FERNANDEZ, Profesor Veterinario, City of Mexico, in sending in a renewal of subscription, says: "I am well satisfied with the REVIEW; its articles are written with great wisdom, and I learn from every one of them. All the writers are veritable scientist men."

DRS. MEAKING, Littlehales and Gray (all of McK. '04) are members of the Royal Northwest Mounted Police of Canada. They are traveling veterinary inspectors, having as their duties the control of contagious diseases in animals, with headquarters at Battleford, Sask., N. W. T.

"I WANT to congratulate you on the improvement in the REVIEW. I have taken it for nearly twenty years, and I can see a great improvement in the last five years. I look forward to its monthly visits with great pleasure."—*(J. H. Taylor, V. S., Secretary Genesee Valley V. M. A., Henrietta, N. Y.)*

DR. D. ARTHUR HUGHES, Veterinary Inspector, Subsistence Department, U. S. Army, has been transferred from Omaha, Neb., to Chicago, Ill., which will be his permanent headquar-

ters. No regular inspection will be maintained at Omaha, but when a contract is awarded to a packer at that or other point an inspector will be temporarily transferred until the contract is fulfilled.

DR. D. J. MANGAN, New York City, has been appointed as veterinarian to the Street Cleaning Department, to fill the vacancy caused by the death of Dr. Arthur O'Shea. Dr. Mangan was formerly Secretary of the Veterinary Medical Association of New York County, and contributed very largely toward raising the efficiency of the Association to its present high standard, in which he retains a lively interest, and is a steady worker in its behalf.

A LOCAL PAPER of Batavia, N. Y., in detailing the events connected with the recent outbreak of rabies in that city, says: "Mr. Fargo's little son was bitten about three weeks ago by a dog owned in the Pan American Building on Court Street. At that time the animal had all the symptoms of rabies. *It has recovered and is perfectly well now.*" Dr. J. W. Corrigan in sending in the clipping, says the dog was treated with "Electric Oil." What's the use?

DR. DICKINSON GORSUCH, Glencoe, Md., has just completed and occupied his new veterinary infirmary, which is novel in that he has thirty acres of land attached to it, upon which he raises enough feed to supply his patients. Last season he garnered six hundred bushels of ear-corn from the five acres which he planted. His infirmary is built with a special eye to sanitation and general healthfulness, while nothing has been omitted in the way of modern appliances for surgical and other treatment.

DR. E. A. A. GRANGE, of New York City, has been lecturing before the Farmer's Institutes of New York State during the past fall. We find in the Report of the State Board of Agriculture two valuable addresses by Dr. Grange upon "Reproduction in Domestic Animals"—one on "Development of the Young," the other on "Delivery of the Young." There are nine well-executed plates illustrative of the lectures, all tending to give the farmer a saner idea of the subject and a more sincere appreciation of the veterinarian.

TRAUMATIC PERICARDITIS.—In the report of the Medical Department of New York Zoölogical Park for 1905, we find the following explanation of the frequency and causes of traumatic pericarditis in bovines by W. Reid Blair, D. V. S., Veterinarian to the Park, which is reproduced on account of its lucidity: "The most valuable animal lost during the year was a buffalo

cow, which was killed by the penetration of the heart by a piece of hay baling-wire five inches in length, producing the fatal disease of traumatic pericarditis. The anatomical arrangement of the pericardium and its relation to neighboring organs renders the bovine of all animals the most susceptible to pericarditis due to the introduction of foreign bodies. As a result of this anatomical arrangement any sharply pointed object capable of passing through the reticulum or second stomach and the diaphragm in the median planes would be directed toward and would enter the pericardial cavity. The causes leading to foreign-body pericarditis are strikingly connected with the manner in which bovines feed. They swallow their food quite rapidly, submitting it later on to a second mastication in the course of rumination. This method of feeding results in the animal bolting its food almost without mastication; hence the possibility of swallowing foreign bodies. These indigestible bodies pass with the food into the rumen or first stomach, and accumulate in the deepest portions of this receptacle. Owing to physiological contractions the lower wall of the rumen rises to the level of the orifice of its communication with the reticulum, and thus passes much of the material accumulated within to this organ. On account of the peculiar arrangement of the mucous membrane of the reticulum, which is divided into polyhedral cells by folds studded with papillæ and serrated at their edges, it offers a fine field for the lodgment of pointed substances, particularly pins, nails, and pieces of wire. The sharpness of one extremity of the foreign body insures its passing readily through the tissues, and as the point is the part that offers least resistance it continues gradually to penetrate. Sometimes the foreign body becomes implanted in the lower wall of the reticulum, and may be expelled directly through the medium of an abscess, thus resulting in a permanent gastric fistula. More often, however, the foreign substance penetrates the anterior wall of the reticulum and gradually works its way toward the diaphragm, impelled by the movements of the reticulum and other digestive compartments. It perforates the muscle and passes into the thoracic cavity, entering either the pericardium or the pleural sacs. Death is the inevitable termination, and occurs as a consequence of cardiac and respiratory syncope."

HORSE-SHOW "VETTING."—A Kansas City subscriber writes: "In an argument with a fellow veterinarian a few days ago, I made the assertion that at one of the shows held in Chicago in the past few years one of the veterinary inspectors did

not understand the use of the measuring standard, and was severely criticized by a leading paper for his ignorance. Can you verify this statement? I am positive that I read such an article." *Answer.*—A transient guest at a country hotel was taken ill during the night with acute indigestion, and feeling the necessity for immediate emesis he sought an appropriate place in which to deposit his supper, and as a *dernier ressort* placed the newspaper he had been reading on the floor and filled it comfortably full of indigestible hotel fare, which he slid under the bed. In the morning he left the town without removing the evidences of his illness, and did not return for several weeks. When he registered at that hotel again, the boniface took him to task for the condition in which he had previously left his room, to which the traveler replied, in Yankee fashion, by asking how he knew that he was guilty of the offence charged. "Because," said mine host, "I saw it myself in the paper." "My dear sir," replied the philosophical guest, "you must not believe everything you see in the papers." And so we have learned to discredit or to at least add quite a little salt to statements which we read in the secular press where veterinary matters are under discussion. Our correspondent, however, is correct in his contention that such an article did appear. We abstracted it at the time but refrained from reproducing it for the reasons set forth in the little story above given. Since the authenticity of the article is brought into question, we have looked it up in our scrap-book and herewith reprint it: "At the Chicago Show 'One of the official veterinarians did not know how to apply the standard to measure a horse. He slipped off the sliding arm and turned it upside down, so that the spirit level was on the bottom instead of on the top, and actually measured a horse in the arena in that fashion, reading his mark from the top instead of the bottom of the arm! Impossible as this may seem, it is a verity. In this way he measured a horse at round 15.3 that stood at about 15.1.' This almost passes belief, and yet what else can be the result of a town-bred vet. run through a short-course veterinary school. Animal Husbandry needs a place in every veterinary school course, and you cannot make a vet. out of the best material short of three winter sessions; you may turn out a horse doctor!"—[That portion of the article in single quotation marks is evidently copied from the daily press, while the final comment as to the need of animal husbandry teaching is by the editor of the *Farmer's Advocate*, of Manitoba, who is himself a veterinarian.]

VETERINARY MEDICAL ASSOCIATION MEETINGS.

Secretaries are requested to see that their organizations are properly included in the following list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 10-13,'07.	Kan. City, Mo.	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	July, 1907.	Asbury Park.	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tu. Feb.,'07	Hartford.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y....	Sept., 1907.	New York City	G. T. Stone, Binghamton.
Schuylkill Valley V. M. A. .	June 19, 1907.	Reading, Pa.	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Monthly.	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.	.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet. Med. Ass'n.....	.....	.....	R. E. Freeman, Dexter.
Central Canada V. Ass'n.....	July, 1907.	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n...	.....	.....	Judson Black, Richmond.
Alumni Ass'n N. Y.-A. V. C..	April, 1907.	141 W. 54th St	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	July, 1907.	Springfield.	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	.....	.....	S. Beattie, Madison.
Illinois V. M. and Surg. A....	.....	Decatur.	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba	Not Stated.	Winnipeg.	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n...	.....	.....	C. J. Fleming, Winston-Salem
Ontario Vet. Ass'n.....	Summer 1907.	Ottawa.	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	1st Wed. ea. mo	141 W. 54th St	W. Reid Blair, 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.....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n...	July, 1907.	Rochester.	J. H. Taylor, Henrietta, N. Y.
Iowa Veterinary Ass'n.....	.....	.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n..	July 10-11.	Mankato.	C. A. Mack, Stillwater.
Pennsylvania State V. M. A...	March 5-6, '07	Philadelphia.	C. J. Marshall, Philadelphia
Keystone V. M. Ass'n.....	Monthly.	Philadelphia.	A. W. Ormeston, 102 Herman St., Germantown, Pa.
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....	June and Dec.	Providence.	T. E. Robinson, Westerly, R. I
North Dakota V. M. Ass'n....	.....	.....	C. H. Martin, Valley City.
California State V. M. Ass'n...	Mch. Je. Sep, Dc	San Francisco	C. H. Blemer, San Francisco.
Southern Auxiliary of California State V. M. Ass'n....	Jan. Apl. Jy, Oct.	Los Angeles.	J. A. Edmons, Los Angeles.
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	Hans Jenson, Weeping Water
Kansas State V. M. Ass'n....	Jan. 1908.	Manhattan.	Hugh S. Maxwell, Salina.
Ass'n Médécale Veternaire Francaise "Laval,".....	1st & 3d Thur. of each month.	Lect. R'm Laval Un'y Mon.	J. P. A. Houde, Montreal.
Province of Quebec V. M. A...	.....	Mon. & Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	Nov. 19, 1907.	Not decided.	D. A. Piatt, Lexington.
Washington State Col. V. M. A.	Monthly.	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association.	An'l Jan., '08.	Indianapolis.	E. M. Bronson, Indianapolis.
Iowa-Nebraska V. M. Ass'n..	.....	.....	A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n..	.....	.....	E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	2d Thu ea. mo.	St P.-Minneap	S. H. Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A....	April 2, 1907.	Cincinnati.	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n..	.....	.....	J. C. Robert, Agricultural Col.
Georgia State V. M. A.....	July 4, 1907.	Atlanta.	L. C. Willoughby, Experiment
Soc. Vet. Alumni Univ. Penn..	June, 1907.	Philadelphia.	B. T. Woodward, Chicago.
Virginia State V. M. Ass'n....	.....	.....	S. C. Neff, Staunton.
Oklahoma V. M. Ass'n	March, 1907.	Guthrie.	W. H. Martin. El Reno.
Veterinary Practitioners' Club..	Monthly.	.....	A. F. Mount, Jersey City.
Vet. Ass'n of Dist. of Col.....	Monthly	Washington.	F. M. Ashbaugh. Wash., D C

PUBLISHERS' DEPARTMENT.

Subscription price, $3 per annum, invariably in advance; foreign countries, $3.60; students while attending college, $2; single copies, 25 cents.

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THE OFFER OF THE REKS-O-SALT CO., of St. Louis, to return the cost of the sample treatment, if their Nitrox Anti-Toxic Salt fails in a case of Azoturia, as per March adv., is noticeable, and proves conclusively that they have made careful tests and believe absolutely in the merits of their product. Think of such an offer on AZOTURIA. It is sufficient to make every veterinarian in the country, "sit up and take notice."

VETERINARIANS are at the present time taking a very active interest in ARTIFICIAL IMPREGNATION; particularly of mares. It is now regarded as a safe and practical procedure by the best informed; the more so, naturally, when the safest and most practical mechanical devices are employed in its performance. The keen interest in this economical breeding problem by veterinarians, is causing them to study the various instruments employed. In this direction, they would do well to correspond with Mr. I. O. Crittenden, No. 15 Fox B'ld'g, Elyria, Ohio, who has made a careful, practical study of the subject. A cut of his instrument may be seen on page 13 (adv. dept.) of this issue.

THE CONDITION OF OUR CITY STREETS AND ROADS, and the spectacle of horses "down," all over the veterinarian's route as he makes his round of calls, suggests the very great usefulness of a HORSE AMBULANCE. One of the best in the world is illustrated on page 22 (adv. dept.)

INTERESTING LIST OF BOOKS, attractive to veterinarians, are seen on pages 12, 24, 31 and 33 (adv. dept.)

THE VERY ETHICAL ADVERTISEMENT OF GRUBEL CO., on page 21 (adv. dept.) of this issue, is characteristic of the gentleman at the head of the firm, and whose name the firm bears.

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