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The...  
**Veterinary  
Profession**

ITS RELATION TO  
THE HEALTH AND  
WEALTH OF THE  
NATION *etc etc etc etc etc etc*

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# The Veterinary Profession

Its Relation to the  
Health and Wealth of the Nation, and  
what it Offers as a Career

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Comprising Several Short Articles by Officers of the University of  
Pennsylvania and Alumni of its Veterinary School

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PHILADELPHIA

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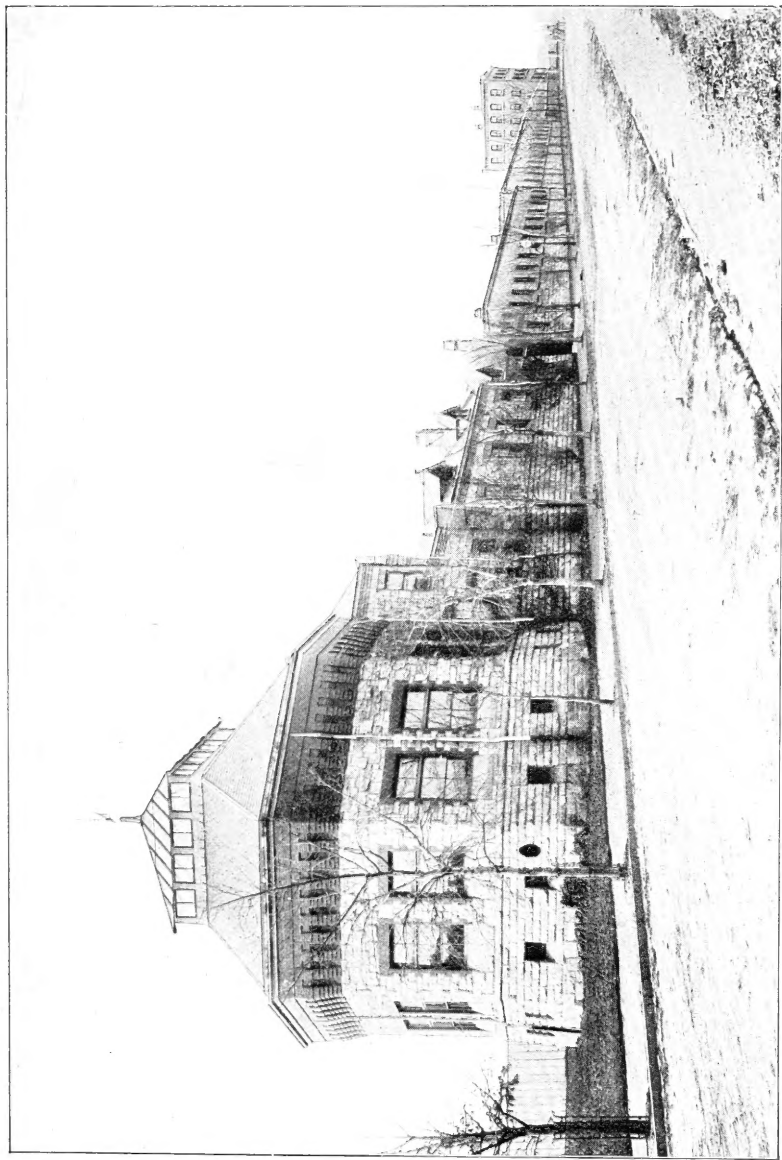


**T**HE veterinary profession, as an occupation for well-trained men, is so new in this country that its scope, usefulness, and possibilities are not generally understood. This pamphlet contains a number of short articles, by several members of this young profession, describing some of the aspects of veterinary work, and its relation to the health and wealth of the nation. ❀❀❀❀❀❀❀❀❀❀

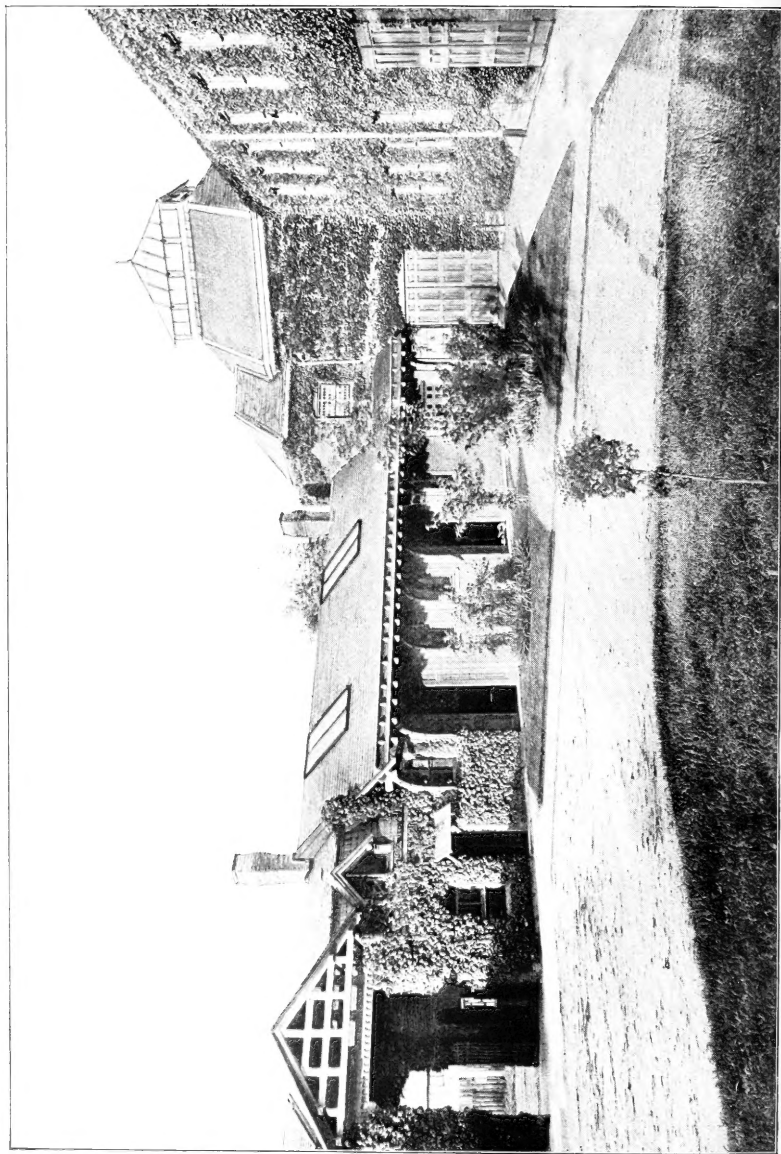
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INNER COURT, VETERINARY SCHOOL, UNIVERSITY OF PENNSYLVANIA.



## VETERINARY MEDICINE.

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By **WILLIAM PEPPER, M. D., L. L. D.**

*Professor of the Theory and Practice of Medicine and of Clinical Medicine,  
University of Pennsylvania.*

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It requires no argument to prove the necessity and the high importance of the veterinary branch of the medical profession. It is not merely the pecuniary value of the interests confided to their care. It is true that when we consider the colossal proportion attained by live-stock interests of this country, it becomes evident that there must be a demand for the services of many medical men of scientific training and of high personal and professional character to whom the community must gladly accord due respect and adequate compensation. But when we reflect that the progress of investigation is revealing many close relations between the diseases of the human race and of our domestic animals; when it is remembered that dangerous and deadly diseases are liable to be transmitted from animals to men, it becomes evident that in the immediate future the veterinary profession must receive full honorable recognition, must have its claim for adequate endowments and foundations admitted and answered, and must itself realize the vast and attractive field for scientific and practical work opened before it. I have long foreseen and can now confidently point to the conditions which make the veterinary profession a pursuit rivaling in honor and in profit any branch of medical and surgical practice—if entered on with full scientific equipment, and with a proper conception of the dignity and importance of the work.

## THE DIGNITY OF VETERINARY SCIENCE AS A PROFESSION.

By **JOHN W. ADAMS, A. B., V. M. D.,**

*Professor of Veterinary Surgery and Obstetrics.  
Veterinary Department, University of Pennsylvania, Class of '92.*

For those who fully appreciate the role of veterinary science in conserving the vast live-stock interests of the world, in protecting man from the many serious diseases transmissible to him from the lower animals, and in ministering to the ailments of dumb creatures, no further proof of the dignity and honor of the new profession is necessary. The few whose judgment has been warped through a misconception of the veterinarian's mission, scientific and social status, are answered in this pamphlet.

The social status of the veterinarian is determined entirely by himself. Like every one else, he is judged largely by his education and associates, and partly by his personal appearance. If he associate with aimless idlers and those who bear a merited stigma, or are notoriously deficient, he can neither move in good society nor achieve complete success in veterinary medicine.

In the veterinary profession, as in every other profession and walk in life, "worth makes the man." Those qualities of head and heart which dignify and ennoble a lawyer, physician or merchant meet with the same spontaneous recognition and equal praise when exercised by a veterinarian.

Veterinary medicine does not need to apologize for its past; it has passed through the same stages of empiricism and quasi-science through which modern human medicine has more slowly toiled, has overcome the same popular prejudices, and is now participating in equal honor and equal reward.

## THE FUTURE OF VETERINARY MEDICINE.

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Since the advent of the bicycle and electric car, the statement has been made that horses will soon become a thing of the past, and veterinary services will be required no longer. The same statement was made when steam roads were first operated, but experience shows that far more horses were required to carry on the commerce that developed as a result of improved facilities for transportation than could be used under the old system, when all inland travel was dependent upon horse-power, and local wants were met almost entirely by local products. While it is true that some horses have been displaced by mechanical agencies, it is also true that the demand for horse-labor in other directions has increased correspondingly and in proportion to the activity of the commerce of the country. For the past few years certain classes of horses have been very cheap, and this is directly attributable to the sudden increase in their production, an increase that was far beyond all possible demands, and to the general depression of all business, which greatly reduced the demand for horse-labor, as well as for that of man. But good horses are and always have been in constant demand at remunerative prices, and all well-informed horsemen admit that the demand for horses of good quality is greater than the supply. Horse-breeding was such an exceedingly profitable occupation a few years ago, and there was such an active demand for horses of a very inferior type, that any one with a little capital could engage in the rearing of horses and make money. That period might justly be compared to the boom-period of a Western town, or to the rush into any branch of industry that is apparently simple, easy to carry on, and promises large returns. But now the business of breeding horses is established on a better, sounder and firmer basis. The

breeders of this country are beginning to understand that it is only by the exercise of much knowledge, good judgment and constant watchfulness that horses of superior quality can be produced, but that when these requisites are properly applied, the reward is satisfactory. Horses will always be used for draught-work in cities and in country; they will always be used for riding and driving; and racing, the sport of kings, will always continue.

But the horse might become entirely extinct, and an enormous field for the employment of veterinary knowledge and skill would still remain. According to the statistics of 1896, the horses of the United States number 15,125,057, and are valued at more than \$500,000,000, while the mules of the country are worth \$103,000,000 more. The cattle of the United States number 48,200,000, and are worth \$873,000,000. The sheep are worth over \$65,000,000, and are rapidly increasing in number and value. The swine number about 43,000,000, and are worth more than \$186,000,000. The total value of the several classes of live stock mentioned amounts to \$1,727,926,084. This total is considerably less than it has been for some years, and than it will be when the general business conditions improve and live-stock values respond to the resulting stimulation. The export trade of the United States bears principally upon the live-stock industry, and exports of horses, cattle, meats and dairy products are increasing from year to year.

No, the field of the veterinarian is not bounded by any prospective limitation of the horse's usefulness. It includes the cultivation, care and protection of animals that supply us with our most nutritious and expensive foods; with many of the luxuries, as well as necessaries, of our diet; with warm clothing for our body, head, hands and feet; with many of the pleasures and comforts of life; with agreeable, healthful

and elevating recreation, as well as of those that furnish the most common means of transporting freight. — *Editorial, Journal of Comparative Medicine and Veterinary Archives, July, 1897.*

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## COUNTRY VETERINARY PRACTICE.

By **E. MAYHEW MICHENER, V. M. D.,**

*Veterinary Department, University of Pennsylvania, Class of '90.*

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The practice of veterinary medicine, in the modern meaning of the words, is comparatively a new profession in the rural districts of America. While from very early times men of varying qualifications practiced veterinary medicine and surgery throughout country districts yet few were graduates, as veterinary schools were not yet established in America, and rarely if ever did it occur that an American went abroad to receive veterinary education. Some graduates, it is true, did come to America from European countries, but they seldom practiced here outside the limits of cities. What medical and surgical aid animals received in the country was almost entirely obtained from self-constituted, or in better and more rare instances, self-educated veterinary surgeons. Great credit is certainly due the few who, without the advantages of instruction other than that which could be obtained from medical reading and personal observation and experiment, became of great value to their respective communities.

These self-educated practitioners were, in general, well patronized and fairly well rewarded for their honest endeavors. Some were prominent in the management of agricultural societies and the then well patronized County Fair, the

records of which show veterinarians to have been recognized as judges and committee-men. The graduate in the country to-day owes much to those men who by their lives demonstrated that the usefulness of the veterinarian is directly proportionate to his education.

Until of quite recent years the veterinarian was wholly unprotected by law in the practice of his profession. There being no legal standard of what constituted a veterinarian, any one so disposed could practice, and many men with scarcely the faintest knowledge of medicine imposed themselves upon the public and helpless animals. This fact becoming generally recognized and the interest of the stock owner and breeder becoming valuable, made necessary the establishment of laws to protect the animals, their owners and the veterinarian. Many of the States now have laws regulating the practice of veterinary medicine and surgery within their borders. With the enactment of such laws veterinary medicine in America began a new era and is rapidly taking its place among the learned professions.

Although great progress has been made since the establishment of the veterinary schools, yet we may reasonably expect more in the near future. Modern research has established the close relationship existing between the health of the domestic animals and that of the human race. Especially is this marked in respect to those animals which furnish meat and milk for our markets. The demand for security from danger in this direction is rapidly becoming greater. This fact in conjunction with the great value of the country's live stock cannot but insure a perpetual demand for the services of well-educated veterinarians in the country. The breeder of high-class stock of all kinds already recognizes the value of the veterinarian, not alone as an expert prescriber of medicines and skillful surgeon, but also as an intelligent adviser in the

science of breeding. Many stock farms now employ veterinarians at a fixed salary and others require inspection at regular intervals.

Many of the States are now taking active measures in the control and suppression of contagious diseases of domestic animals. This work requires the employment of competent veterinary inspectors, and in many States the country veterinarian does such of this work as is necessary in his locality.

Inasmuch as State or national measures alone seem to be able to successfully combat widely-prevalent contagious disease, it is fair to assume that such will be the means for the future dealing with this important work, and that the demand for the educated veterinarian will rapidly increase in the country districts. That there is now such demand is proven by the actual experience of those engaged in country practice, and we may directly infer that the numerous students now enrolled from country districts is good evidence of this.

*The demand for veterinarians increases as it becomes more and more firmly established that both private and public economy, as well as humanity, demand the preservation and improvement of the domestic animals.*

To the young man of the country, who has decided to enter some profession, there is to-day none offering better advantages than veterinary medicine; but certainly in no profession does success depend more directly upon thoroughness of preparatory training, which only the most earnest effort and sufficient time at a well-equipped veterinary school can bestow.

The pleasures which fall to the lot of the country veterinarian are not few. Prominent among them are the unusual opportunities for self-improvement by study and

observation, in analysis of various subjects which collectively renders the practitioner better qualified for his work. The study of the habits, the peculiarities of temperament and mental powers of animals, the amazing influences of the laws of heredity, the effects of use and disuse, these and very many other matters of intense interest to him who enjoys his work are the special privilege of the country veterinarian.

Aside from the pleasures, the remuneration of the country veterinarian can safely be classed as fair; here no exception is found to the general rule that the reward of the professional man is fixed directly as his usefulness is manifest.

*North Wales, Pa.*

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## VETERINARY PRACTICE IN CITIES.

By **SIMON J. J. HARGER, V. M. D.,**

*Professor of Comparative Anatomy and Zootechnics.  
Veterinary Department, University of Pennsylvania, Class of '87.*

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One of the first thoughts of the young veterinarian after graduation is, "Where shall I locate?" To decide this point is very perplexing for many, for, as a rule, they have not the data necessary to an intelligent choice. The question is deserving of most careful consideration. It is a step at the beginning of the young veterinarian's career upon which much of his future professional and financial success depends. He must consider the resources that can be commanded at each place, the opportunities for higher professional attainments as well as his adaptability to different kinds of professional work and to the classes of people with whom he must come in contact. These points cannot be emphasized too strongly since they are pivotal points in one's career. Some





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prefer the agricultural districts, others cities and larger towns. Each has its advantages and disadvantages. A practitioner successful in the country may not be so in the city, and vice versa.

Without deprecating or extolling too much either one or the other, city practice offers from a comparative point about the same advantages that are incident to other professional and business pursuits. There is no dearth of cities and large towns in the United States where a well-qualified practitioner can locate and build up a lucrative practice. In fact, there are many small cities with good agricultural country surrounding them which have no veterinarian, save possibly an empiric, and the writer knows it to be a fact, that an empiric cannot successfully compete with a qualified practitioner.

In cities, the practitioner feels the healthy influence of competition—a contention that pervades all business and professional pursuits. He has numerous colleagues who vie with him for superiority and eminence, and he must necessarily keep himself abreast of the times to maintain his standing in the profession. He must be of rather studious inclinations and keep himself fully informed upon current topics, the most recent theories of disease and the latest and most successful methods of treatment. He constantly finds it necessary to refresh his mind with facts which he had previously studied, and to delve in new literature to maintain his prestige. He improves his own condition, contributes knowledge to his profession and renders better service to his clientele—all the result of good, healthy competition.

Again, in the city there are better opportunities for investigating the different branches of veterinary science. It is less difficult to form veterinary societies, the importance and benefit of which we need not emphasize. The city veterina-

rian can consult the various municipal and hospital libraries, visit laboratories where experimentation and original research in diseases which interest both the physician and the veterinarian are being made, and connect himself with various scientific organizations that add to his store of knowledge and increase his ability to interpret the numerous phenomena of cause and effect. Cities offer facilities to the working practitioner that can not be obtained elsewhere.

New discoveries in medicine and other branches of science and departure from the ordinary routine of things find their initial encouragement in cities. They are a power and their stamp of approval gives a powerful impetus to questions of public interest. Sanitary science, meat, milk and other food inspections, now occupying the public mind, must necessarily find their first and greatest impetus in the city. Cities must give these things identity and approval before they will take root in the less populous districts.

To further this end, no one is in a better position than the city veterinarian who keeps himself in close touch with his constituents and with public officers of acknowledged influence. He can be "the power behind the throne." It is his duty to use his influence with those who are in power, to secure the introduction and extension of all those measures conservative of public health and public funds, which are within the province of the veterinarian.

In practice, the veterinarian meets a kind of work not found outside of cities. This is dependent upon a number of conditions, as street pavements, the nature of the work done by horses, irregular feeding, crowded and filthy stables, and constant exchange of horses in the horse marts. Street pavements give us numerous cases of lameness and diseases of the limbs; heavy feeding with continuous work, or work at long intervals, the various colics and azoturia; filthy stables and

horse markets furnish contagious diseases. These diseases are of such a nature and occur under such conditions as to require the most prompt and efficient treatment in order to bring them to a successful termination—a degree of skill and tact required in scarcely any other place. Dogs and other pet animals constitute a considerable portion of his practice, and such work is often quite lucrative. The city veterinarian is often embarrassed in being granted insufficient time in which to effect a cure. The merchant's needs are more urgent and he is less willing to throw a disabled horse out of work than the farmer is, so that this is a difficulty to be contended with.

City work has the advantage of being concentrated, confined to a small area, while the paved streets, street and steam cars enable one to economize time.

The proverbial "silver spoon" is not possessed by many of us, but it can be safely said that a well-taken-care-of veterinary practice in a city affords agreeable work and a sufficiently remunerative and honorable means of livelihood, a means which we can acknowledge with just pride and satisfaction.

*Philadelphia.*

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## **THE ADVANTAGE OF A VETERINARY EDUCATION TO THE BREEDER.**

**By LEO BREISACHER, M. D., V. M. D.,**

*Ex-Assistant Professor of Comparative Physiology,  
Veterinary Department, University of Pennsylvania, Class of '88.*

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It is but a few years since the importance of the veterinarian on the breeding farm was first recognized in America. This is not to be wondered at if we remember that it is not so many years ago that the farrier and the "cow doctor" were

the sole medical authorities in veterinary matters. The "horse-doctor" in those days was often illiterate to the degree of being unable to decipher the teachings laid down in "The Farrier's Guide," or the "Every Man His Own Horse-doctor."

Since that time great changes have been wrought in veterinary education. The young man of to-day may graduate from one of several veterinary colleges which are in every respect equal to the best medical schools of the world and infinitely superior to the "mushroom" medical colleges which abound throughout the entire country. With this advancement in veterinary science, breeding interests have also made great strides, and to-day many first-class breeding farms have regular veterinary attendants who give their entire time to the farm. Smaller farms employ veterinarians to make visits of inspection at regular intervals, and to attend to parturition cases and diseased animals as occasion may demand. Certain it is that no *modern* breeding farm can be properly run without the advice of a veterinarian.

There is probably no country in the world where the veterinarian is of so much importance to so large number of breeding establishments as in America, and this is so from the fact that with us so many men embark in the breeding business who have neither proper training nor adaptability. It seems that a man has merely to accumulate \$100,000 or even less, to be tempted to go into the breeding of horses. Breed, family traits, heredity, feeding, training may be absolutely foreign to his knowledge. He will read a *journal* devoted to the breeding of horses, for a fortnight or two and, *behold!* a new *breeder* will have been born to inflict upon the world the mis-shapen produce begotten by the animals of his selection.

In England, France, Austria and Germany the govern-

ment protects and preserves the breeding interests, and one rarely finds a pure amateur venturing into the breeding of horses on his own responsibility. In these countries both the private and the government establishments are in the vast majority of instances run under the guidance of a veterinarian.

Great breeders, we might almost say, are born, not made. Fairly successful breeders are found the world over, but truly *great* breeders are very rare indeed.

The man who selects two moderately well-bred mares without any specially good qualities in breeding, speed or individuality, and breeds them to two stallions, one without demonstrated speed or reputation, as a sire, the other with only a fair reputation as a sire, and produces two phenomenally fast trotters of good size and conformation, both of which become successful sires of fast race horses may, or may not, be a great breeder. The test of the calibre of a breeder is more severe. The truly great breeder is the man who makes uniform selections of animals for some definite purpose, and who is able to produce a uniform lot of sound horses with size, style and substance, and if need be with speed. Such breeders are very rare indeed and, especially, among the men who breed for the sake of diversion. A successful breeder, of horses for instance, must be a *lover* of horses, he ought to be a good *handler* of horses, he must be fully conversant not only with their *records* in the show-ring, under the saddle and on the turf, but what is still more important, he must know the individual faults and strong points of each member of the family. He must not be contented with simply seeing the offspring, but must see and know both sire and dam. A colt by Electioneer out of a Nutwood mare makes him brother in blood to Arion, but what a multitude of faults such a pedigree obscures, and how much havoc it may produce! It goes

without saying that a breeder must be a good judge of *exterior*; he must understand the subjects of *feeding* and *alimentation*. Further, he must understand the subjects of *gestation*, *parturition* and the treatment of accidents and disease, and this brings us, finally, to the point where the advantage of a veterinary education to the breeder becomes apparent.

To be a thoroughly good judge of exterior, he must know anatomy, physiology, medicine and surgery. Faulty teats and nasal apparatus, diseased eyes and glandular enlargements, evidence of a punctured vein or the "roaring-operation," muscular atrophy, bony enlargements, etc., etc., and the proper adjustment of the various parts, as head, ears, neck, shoulder, arm, forearm, knee, cannon, etc., are appreciated by none as thoroughly as by the veterinarian, who has received thorough instruction in zoötechnics while at college.

The subject of food stuffs, feeding and alimentation can be learned only by a thorough study of physiology, botany and chemistry. Embryology and parturition belong to the expert alone. For a thorough comprehension of heredity, it is necessary to have studied embryology and biology. And so, too, the care of sick animals can be best rendered only by the veterinarian, who has a very decided advantage, from whatever point the subject may be viewed.

The fact that some veterinarians receive several thousand dollars a year for their services upon stock farms is proof enough that a first-class veterinarian is worth that much to those breeding establishments; where the owner can pay himself the salary he would command as veterinarian to the farm, his profit is a double one.

In conclusion, I may say that although familiarity with any of the branches taught in any of the veterinary schools of this country will prove of value to the breeder, yet it is



rather to the special study of *zoötechnics*, comprising as it does all that has to do with animals as property, that he must look for his greatest assistance. Such a course in the breeding, care, management and special characteristics of the various breeds of domestic animals, as is nowhere more thoroughly taught than in the Veterinary Department of the University of Pennsylvania, will be of inestimable value to the breeder, and almost indispensable to the veterinarian who wishes to connect himself in a professional way with a large breeding farm.

*Detroit, Michigan.*

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## MUNICIPAL MEAT INSPECTION.

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**By A. S. WHEELER, B. S., V. M. D.,**

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*Formerly Chief Meat Inspector, New Orleans.*

*Veterinary Department, University of Pennsylvania, Class of '91.*

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“The consumption of flesh appears to be proportional to the degree of activity of a people.”

The inspection of meat has the prestige of a long line of ancestry, although the early dawn of its existence is shrouded in religious ceremonies, associated rather with the sacrificial altar than the abattoir. The only ancient peoples that have transmitted us customs of meat inspection are the Semitic races, the Jews and the Arabs. The Talmud contains the ritual of the Jewish inspection.

We are all familiar with the *Schoshete* or slaughterer with his faultless, flawless, mammoth, razor-shaped knife, who represents to this day the orthodox follower of the Jewish faith. In order that the animal may be “kosher” (sound), the following rules must be observed: The four feet must

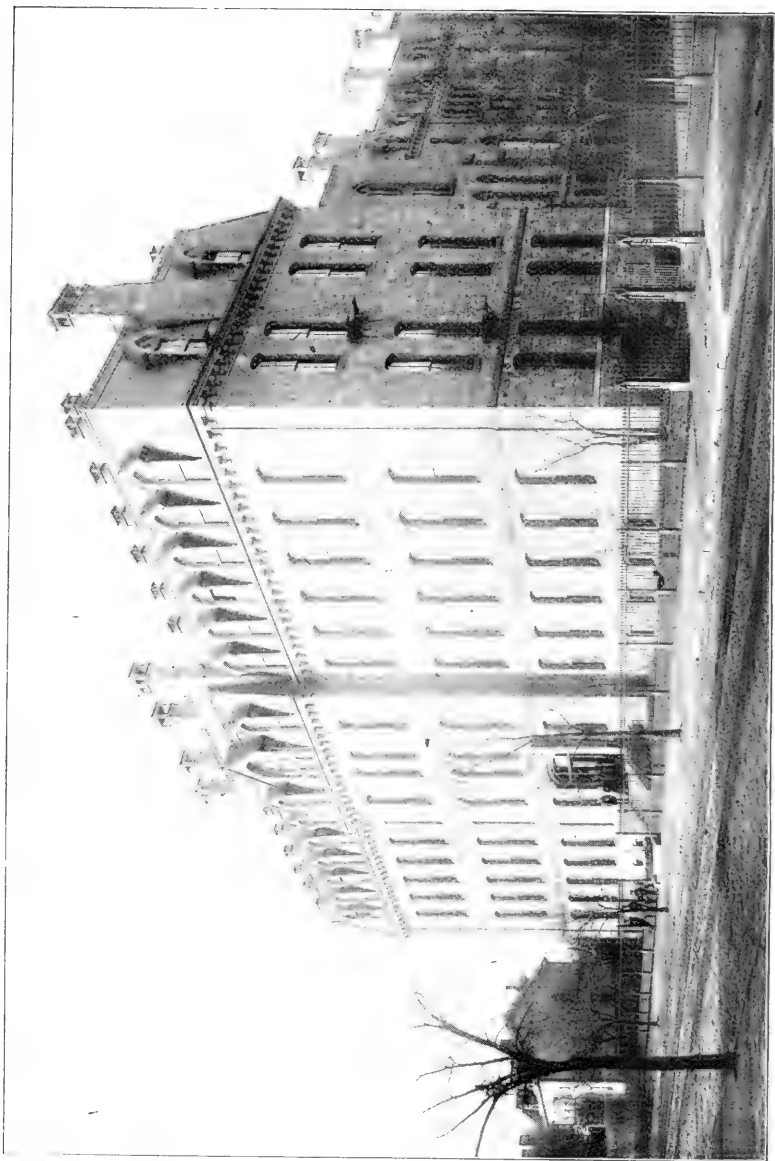
be tied or bunched together, the throat must be cut with one unerring stroke of the knife, and the animal thoroughly bled. Then follows a most painstaking examination of the noble parts (vital organs), especially the lungs. I have known a half hour spent on the lungs alone and five or six animals rejected on some trivial flaw in this organ. Whether this careful inspection of the lungs signifies the recognition of tuberculosis and its communicability to man is questionable.

Of course the condemned animals are sold by our less scrupulous Gentile butcher. The purpose of bleeding thoroughly seems to derive its significance from the belief that blood constituted the river of life and hence should not be used as food. If the slaughtering knife was bent or blunted and did not cut perfectly, the animal was put to unnecessary pain, and its struggling was supposed to inhibit the action of the heart through fright and retard the free escape of the blood, which would make the animal unclean.

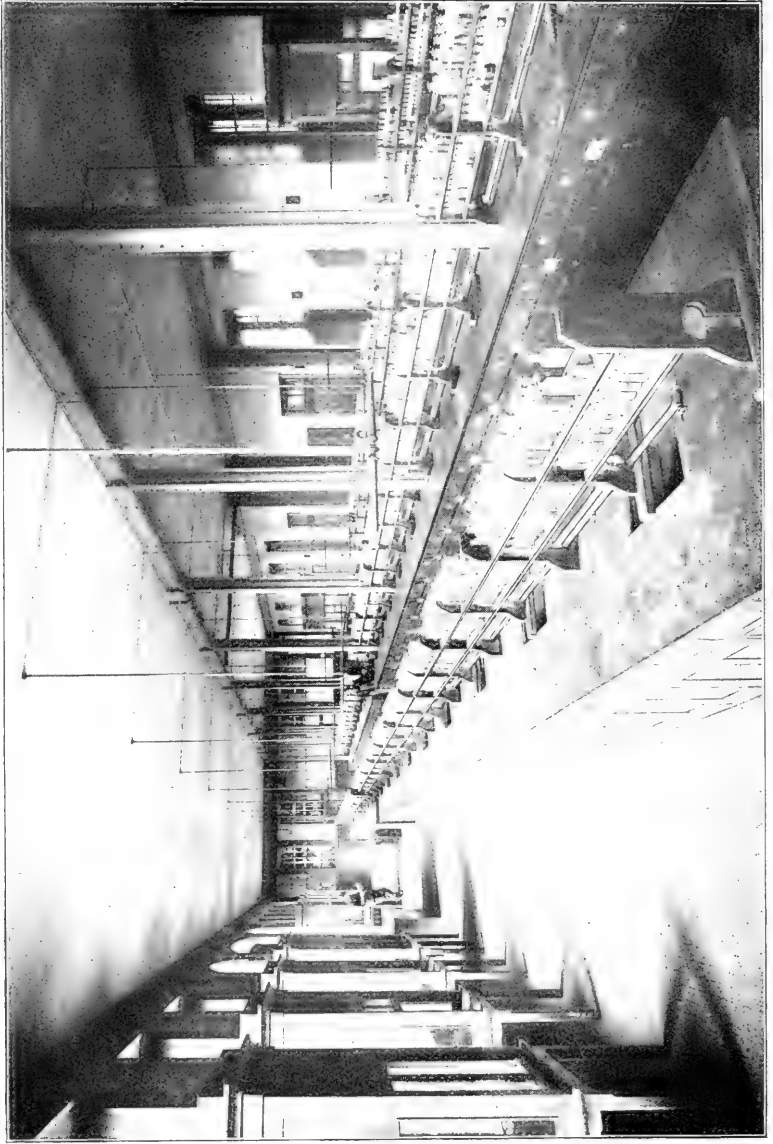
The custom of removing the sciatic nerve (geed-ha-nose) is almost obsolete in this country. This practice of removing the sciatic nerve was considered necessary in order to render the hind quarter sound. The difficulty of doing this has brought it into disuse, and the best way being the easiest way, the hind quarters are not used at all. The Scriptural reason for this last custom is supposed to be based on Jacob's wrestling with the angel (Gen. xxxii).

Similar rules are enforced by the Orthodox Mohammedans of Syria, especially in regard to the thorough bleeding of slaughtered animals.

The selection of certain animals among all the ancient nations, as sacred or clean and unclean, was probably based on a Pythagorean doctrine, and racial and tribal prejudice. It is hardly possible that the early interdiction of swine was on account of the danger of trichina. Of course, I do not



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wish to pose as an authority on these historical points of which my knowledge is indeed very limited.

Probably the next period in the development of meat inspection was during the first century A. D. Columella wrote the most complete classical treatise on agricultural affairs, and he recommended such measures as the separation of the diseased from the healthy animals. During the Middle Ages all sanitary measures slumbered, the sacrificial lamb becomes the poor human victim and the national sport becomes the *auto-da-fé*.

The sixteenth century marks the Renaissance of science. The new era of veterinary police was given an impulse by the numerous outbreaks of disease among the domesticated animals during that time.

In the beginning of the eighteenth century rinderpest spread with such disastrous results throughout all Europe, that the animal industry was in great peril. This state of affairs attracted the attention of the various governments and the famous scientists of that time and they began the study of the diseases of the domesticated animals.

Such men as Ramozzi, Tancisi and Schroeck were the first to give a reliable description of rinderpest, as well as to propound the necessary measures to combat it in the year 1711. This step may be considered as the foundation of veterinary sanitary science, of which meat inspection is probably the most important subdivision. Soon after that other epizootic diseases were studied, and preventive sanitary measures were enforced. There was considerable improvement in the cultivating and feeding of animals at this time which received an impetus by the importation of foreign breeds, which in turn introduced new diseases. The increasing value of animals demanded the public protection of herds. In such manner veterinary sanitary measures began to become more important and to be recognized as a science.

From the foregoing outline we realize how meat inspection reaches out into the great wealth of animal industry of the nations. It plays a conspicuous role not only in the conservation of probably the greatest of the world's industries, but offering such unusual facilities for studying the various diseases of the meat-producing animals, it should also be one of the dominating principles in preserving the health of man. There is no department of veterinary science in closer touch with the enormous live-stock interests of a commonwealth, or a nation than the one under discussion. I give the report of the Department of Agriculture as to the live stock in the United States for January, 1897:

	NUMBER.	VALUE.
Horses .....	14,365,000	\$451,800,000
Mules .....	2,216,000	92,400,000
Milch Cows .....	15,942,000	369,300,000
Oxen, etc. ....	30,508,000	504,500,000
Sheep .....	36,819,000	67,500,000
Swine .....	40,600,000	167,400,000
		<hr/>
Total .....		\$1,652,900,000

I include horses and mules in this list for if worst comes to worst those of low value could be used for their meat, to which there can be no objection except foolish sentiment.

I regret that I have not at hand the statistics of game, fish, crustaceans and mollusks, which constitute such a significant part of our meat diet, and over which our meat inspection service should extend.

At the present time the science of meat inspection as a branch of veterinary sanitary science and police, is commanding more and more attention throughout the civilized

world. Of course the American cities are much behind some of the European cities, as Paris, Berlin, Vienna. For example in Paris, the expense of the meat inspection service is 336,000 francs or \$67,200. There are seventy-nine veterinarians employed and twelve "surveillants," or lay inspectors, making a total of ninety-one inspectors (1895). This force is under the supervision of the Prefect of Police; it is subdivided according to the municipal districts and the officers do double duty by inspecting both at the slaughter-houses and markets, which are equipped with laboratories for microscopic work and every convenience and facility for conducting efficient and scientific work. The inspectors devote their entire time to this work, and do not undertake a large practice in addition.

In the United States there are two separate systems of meat inspection, but neither of them is complete in the sense of thoroughly covering the whole ground. We have the national, supported by the general government and extending its usefulness only and specially to international and incidentally to interstate trade. The good work being done by this system is principally confined to the large packing houses of the West.

The other system which is of greater interest to us is the local municipal inspection, which in none of our larger cities has made more than a beginning. This latter system falls either under the Department of Public Safety, or the Board of Health. I think it rather a board of health matter, in so far that there is invariably a decided element of medical men in boards of health, and reports on meat inspection are more or less of a medical and scientific character, and can be fully appreciated only by men of more or less scientific training, which we cannot expect in a department of public safety. Another important feature, no matter where meat inspection

is placed, should be its entire freedom from political influence. Of course there should always be the strongest friendly relations between the national and local system, and complete cooperation between the two. The great wave of municipal reform that has been sweeping over the breadth and length of this land, will do much to bring meat inspection into popular notice.

Many of the States have introduced measures into their Legislatures, formulating various systems of meat and milk inspection. The meat inspection bills thus far have not met with uniform encouragement, but I can safely predict that the time is not distant when every city with a population over 10,000 will be awakened to the necessity of having one or more competent veterinarians as meat inspectors. And several States have already provided for a competent veterinarian as meat inspector in each city within the State having a certain population.

We have now reached a time when there is a demand for well-trained men to take part in the upbuilding of an important branch of our science, which has hitherto received far too little attention. Our colleges have not taught it thoroughly, our men have not fully equipped themselves for it. But its importance is now realized and the best Veterinary Colleges have provided suitable courses of instruction that will enable the veterinary profession to point with pride some day, to the grandest of monuments, a good work accomplished, and to furnish the world with a healthy, clean and wholesome meat supply.

*Asheville, N. C.*



**UNITED STATES GOVERNMENT MEAT INSPECTION.**

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As to the field of labor open to the veterinarian in the United States Bureau of Animal Industry, much can be said in its favor, provided those who shall make application to the Civil Service Commission for examination, anticipating appointment in the Bureau's corps of inspectors, shall have first fully decided to continue their studies in zootechnics, pathology, bacteriology, and allied branches, with an honest intention of becoming as efficient in the service and as valuable to the medical world as their respective abilities will permit. There is probably no connection outside of the college offering the graduate in veterinary medicine equal facilities for intellectual development in matters pertaining to economics and the public health, as may be found in one of the various divisions of this branch of the government service.

The exceeding value of animal and meat inspection is each year becoming more generally recognized and appreciated, hence the work increases constantly both in volume and importance, making it necessary for the veterinarian to continually apply himself to study in order that he may keep pace with the constant advance, and with it develop in intellectual ability and general efficiency. Too frequently, however, recent graduates are prone to lose sight of the fact that one engaging in the study of medicine must devote his entire life to the acquirement of medical knowledge, by persistent study, investigation, and research; otherwise he will

not be progressive and will fail to advance with the busy army of industrious workers, or even to keep himself informed as to the advancement being made.

To those, then, who anticipate progression, and are blessed with the necessary broad professional training, ambition, energy, and earnestness of purpose, I say that it is a delightfully pleasant and satisfactory field of labor, even though accumulating accessions of scientific knowledge are the chief, or, at least, a part of the remuneration. To those who are satisfied with the attainment of their collegiate degree, I advise a devotion of time and attention to other lines of work than those connected with United States Government inspection, as it is a misfortune to both the Bureau and the individual when appointment is secured, if he have not an apprehension or fair conception of the importance, quality, character, and quantity of work he must perform. If, on the contrary, he is in possession of an adaptability for the work and an appreciation of the opportunities offered, he will find it both interesting and instructive.

The inspection of meat constitutes the most extensive and important part of the work of the Bureau, and meat inspection is undoubtedly the most arduous of the duties connected with the service. This branch likewise offers by far the largest field of any of the Bureau divisions as a career for the veterinarian.

Government inspection has been inaugurated at the large abattoirs throughout the country. At each station, usually in the larger cities, there is an inspector in charge, with a corps of inspectors, stock-examiners, and taggers under his direction. The inspectors and assistants are on duty—the inspector on the slaughtering beds, with sufficient help to cover the postmortem work of the entire output of the establishment—during the slaughtering hours of the day,

which are irregular, owing to the uncertainty of the number of animals to be slaughtered because of the variations in supply and demand.

Antemortem inspections are made in the yards by the inspectors, which not only serve as a guide in the postmortem work, but enable the inspector to verify his diagnoses and improve his diagnostic capabilities, allowing an admirable opportunity subsequently to study the pathological lesions and compare the morbid effects of the disease with the physical signs and symptoms observed during life.

The other divisions of the Bureau are, Live Export Cattle Inspection, Quarantine Division, investigations of reported outbreaks of disease—field work, the department of animal pathology and bacteriology, with laboratories, etc.

While the whole work of the Bureau is under the direction of Dr. D. E. Salmon, its Chief, the laboratories and experiment station are under his immediate supervision, at Washington, D. C. (See published reports.) The inspectors and assistant inspectors have been placed in the classified service; hence a competitive examination before the United States Civil Service Commission determines the professional fitness of graduated veterinarians, as well as the general fitness of lay employes for the respective positions. The names of persons who have passed satisfactory examinations are entered on the eligible list, and as the extension of the work or vacancies necessitate the appointment of new men they are taken in order from the list of eligibles and assigned, when possible, to work in the district in which they have their residence.

The first requirement of an applicant for examination, in order that he may be eligible for an inspectorship or assistant inspector's appointment, is that he be a graduate of a recognized veterinary college. While this, without due con-

sideration, might in some instances seem an injustice, the educated veterinarian will at once recognize its importance by calling to mind the absolute unfitness for such positions of trust of some who hold diplomas, since moral standing, education, business and professional knowledge are the demands of the business world. As a result of the civil service examination requirements, the personnel of the Bureau force has undoubtedly been improved, so that in both the professional and the non-professional departments of the work its members show a higher mental attainment and capacity. Consequently, we of the honored and progressive profession may feel a just pride in the mutual manifestations of the single purpose exhibited on the part of our national organization, the United States Veterinary Medical Association, and the Veterinary Corps of the United States Bureau of Animal Industry, under the leadership of our Chief, Dr. D. E. Salmon, toward a higher standard and more uniform education in our colleges; and my Alma Mater, in the dedication and opening of her veterinary department in 1884, was among the first to "set the pace." A coincidence!—the same year dates the organization of the United States Bureau of Animal Industry, with the present Chief at its head.

Section first of an Act of Congress approved May 29, 1884, is in part as follows:

"The Commissioner of Agriculture shall organize in his Department a Bureau of Animal Industry, and shall appoint a chief thereof who shall be a competent veterinary surgeon, and whose duty it shall be to investigate and report upon the condition of domesticated animals of the United States, their protection and use, and also inquire into and report the causes of contagious, infectious, and communicable diseases among them, and the means for the prevention and cure of the same."

It would be impossible to give an outline history of the Bureau of Animal Industry in the limited space of this article, and as full information may be had by reading the Reports and Bulletins issued at more or less regular intervals, it would seem needless to do so.

The Meat Inspection Division was organized and work inaugurated during the first half of 1891, under the provisions of an Act of Congress, approved March 3d, of that year. The enormous amount and value of the work, as well as the competency of the Chief, are attested by the results; and all persons interested in veterinary science should familiarize themselves with these reports, since as a whole they represent exceedingly valuable veterinary and medical literature, not only exemplifying the intimate relation existing between the two branches of medical science, but containing a number of entirely original investigations, with detailed descriptions of the courses of procedure by which new knowledge of bacteriological and pathological phenomena has been ascertained and established. Consequently they are of inestimable value to the practitioner as books of reference, and for the use of the student, in conjunction with the prescribed textbooks, they are almost indispensable.

In regard to the future of federal inspection in the Bureau of Animal Industry, as a career for the veterinarian, its past history must in part foretell. Among the most salutary changes, and one that portends increased and increasing efficiency in the individuals, as well as more rapid and general development in the various scientific and commercial interests of the work, was the action of the President which placed the employes in the classified service, thus making individual ability, capability, and merit the factors in securing and retaining position and advancement therein, rather than political preferment, which of necessity obtained to an

extent in the earlier history of the Bureau. Some of the inspectors, however, whose appointments date from the inauguration of the work are still in the service, as a result of conscientious effort and undivided attention to duty. This must be a source of encouragement to more recent employes, and serve as a stimulus to their professional and business ambition, as under the newer regime a more vigorous growth in all directions may be confidently predicted.

*New York.*

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## **DISEASES OF ANIMALS TRANSMISSIBLE TO MAN.**

**By ROBERT FORMAD, M. D., V. M. D.,**

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*Veterinary Department, University of Pennsylvania, Class of '88.*

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The transmission of diseases of the lower animals to man was known even to the ancient Egyptians, who believed that leprosy and inflammation of the eyes were caused by eating pork and the meat of unclean animals. Moses prescribed rigid laws for the Israelites, prohibiting the use of meat from tuberculous animals. The Romans and Greeks formulated some laws of veterinary sanitation that stand to the present day. They separated sick animals from the healthy and exterminated disease by fire. In the eighth century, church laws enforced by Bonifacias and Gregory III, prohibited tuberculous meat and the meat of horses. In 1248 Bishop Lutold, recognizing the dangers of hydrophobia forbade the eating of meat of animals killed by dogs and wolves. In the eighteenth century, rinderpest committed great havoc throughout Europe, and Lon-

cici and Ramazi deserve special credit for the suppressive measures they recommended to check the disease.

In the present century, investigation of the transmissibility of diseases from the lower animals to man, has shown the important relation of some of these diseases to our food-supply. Recent investigations lead to the conclusion that the study of comparative medicine is necessary to properly deal with our foods of animal origin. Modern medicine tends toward prevention of disease through a better understanding of the means of transmission and perpetuation. It is leading to an appreciation of the necessity of establishing a more competent system of sanitary police that shall properly guard the animal food-supply of our people, and promote the health of animals by judicious measures enforced by State veterinarians in co-operation with experimental stations, where new means and new ideas are constantly developed.

Some say that the field of employment of the veterinarian is passing away, but this is not so and the statement is based on a misconception as to the proper work of the veterinarian. The whole field of veterinary sanitary science lies open, one of the broadest of all fields of employment, in which in the near future countless numbers will be required to do the work that a proper and wise guardianship of these interests will demand.

That the question of the transmissibility of disease is of great importance is easily shown. At every international congress of hygiene held during the last ten years in the United States, Belgium, France, Germany, England and Switzerland this question has been debated by the foremost veterinarians, physicians and scientists of the present day. Without going into a systematic description of communicable diseases, I will point out in a general manner a few of the more important characteristics of some whose transmissibility is proven beyond doubt.

*Rabies* (hydrophobia) is a contagious disease affecting dogs most often, but transmissible to man and nearly all domestic and wild animals. It is quite common in the United States and in many parts of Europe.

Proper regulations not only lessen its frequency, but may completely suppress it, as has been shown in Sweden, where not one death had occurred since 1870, though the previous mortality was eight to ten persons yearly.

The disease is generally transmitted by the bite of a rabid animal. The wound is infected by the saliva and the poison is conveyed through the entire body. The wound may heal completely and the symptoms of the disease not develop for weeks or months. The contagion that causes the disease is found in its most concentrated form in the brain, and in a more dilute state in the saliva, tears, milk, pancreatic juice, and is said to exist in the blood in certain stages of the disease.

Pasteur discovered that a serum containing an attenuated toxin derived from the brain and cord of an animal suffering from rabies would prevent the occurrence of the disease in those who have been bitten by animals undoubtedly rabid. On this principle many Pasteur institutes have been established, in which preventive inoculations are made with quite satisfactory results.

It is impossible to estimate the total number of cases of rabies in this country as no accurate statistics have been gathered, but in Belgium, England, France and Germany the following numbers of cases in animals are reported:

	1891.	1893.	1894.
In Belgium .....	254	65	182
In England .....	340	92	122
In France .....	1297	1132	1334
In Germany .....	540	466	714



During those three years, then, the total number of animals reported as proved to be rabid was 6538.

The following table shows the number of persons treated at the Pasteur institutes from 1886 to 1890 inclusive:

	TREATED.	DIED.	PER CENT OF MORTALITY.
1886 .....	2682	36	1.34
1887 .....	1778	21	1.18
1888 .....	1625	12	0.74
1889 .....	1834	10	0.54
1890 .....	1546	11	0.71

Bollinger gives the death-rate without local treatment 83 per cent, with cauterization of the wound 33 per cent, and with Pasteur treatment within the last two years 0.4 per cent to 0.6 per cent. Bearing in mind that the mortality without preventive inoculation is over 80 per cent we can see from the above table how enormously the mortality is reduced under the preventive treatment.

*Glanders* is a contagious disease affecting principally the horse, the ass and mule, but transmissible also to man. The disease is accompanied by an oily discharge which contains the bacilli of glanders, the cause of the disease. The disease is transmitted to persons by the discharge in a fresh state coming directly in contact with abrasions on their skin, or by infection through handling articles which the diseased animals have infected, such as harness, blankets, mangers, water troughs, etc. The discharge which is constantly secreted and often times in considerable quantity acts as a perpetual source of contagion not only while in the fluid state, but also when dry. It retains its virulence for a long time.

Persons who handle glanderous animals, or in any way

closely associate with them or their products, are liable to contract the disease.

*Mallein* is an extract of the pure culture of the bacilli of glanders and is used for diagnosing cases of glanders which are not sufficiently developed to present characteristic symptoms of the disease.

*Anthrax* is a contagious febrile disease produced by the *bacillus anthracis*. The disease affects all domesticated and most wild animals, and is readily transmissible to man. According to Athanasius Kiraker, in 1617 this disease was prevalent in the bovine species and killed 60,000 people.

The germ is found in the blood and all secretions and excretions of the diseased animal. It may be transmitted to man not only by direct contact with the diseased products or contaminated objects of any sort, but also by the intermediation of insects that have been in contact with the products of the diseased animal. Animals grazing where the carcasses of animals dying of anthrax have been buried are sometimes infected by the spores of the germ which have been brought to the surface of the ground by earth worms.

**Malignant pustule** is the form in which anthrax usually manifests itself in man. Without prompt and energetic treatment it terminates in death. From the liability of workers in wool to this disease, it has been called "wool-sorters disease."

*Tuberculosis* (phthisis, consumption) causes one-seventh of all deaths in man. It has destroyed more lives than all the wars and outbreaks of cholera, small-pox, and yellow-fever combined. In 1882 Koch discovered the *bacillus tuberculosis*—the cause of the disease. The identity of tuberculosis in man and the lower animals has also been established. The germs and their products may be in any and every tissue of the body. There are many instances on record where entire

herds of cattle became infected by the introduction of a single diseased animal and death after death followed, while previous to the addition of the newcomer the disease had been unknown in those herds. The transmission of tuberculosis by the use of milk from tuberculous animals is possible, particularly in children who live largely on a milk diet. Bollinger proved that the milk of eleven out of twenty cows suffering from tuberculosis was infectious, although the bacilli were found in the milk of but one cow.

*Tuberculin* is an extract of a pure culture of tubercle bacilli. It is used very extensively for diagnosing tuberculosis when the symptoms are not well marked, and has proved to be our most valuable diagnostic agent.

*Cow Pox* is an acute eruptive disease of bovines, characterized by vesicles and pustules on the skin, udder, teats and other parts of the body. This disease is usually conveyed from one animal to another by the hands of the milker. Innumerable cases have been reported in which cow-pox has been transmitted to human beings.

The virus contained in the eruption constitutes the well-known *vaccine* that is used for the inoculation (vaccination) of people, to prevent small-pox, a closely-related but not identical disease.

*Foot and mouth disease* (acute aphthous stomatitis) is characterized by eruptions around the mouth and feet of animals. It occurs among all cloven-footed animals and is transmissible to man, particularly by the milk, or milk products, as butter and cheese.

Lack of space forbids mentioning other grave diseases and pathological conditions that mankind is liable to contract from animals and their food products. Actinomycosis, diphtheria, helminthiasis, and the various digestive disorders caused by eating diseased meat and drinking diseased milk cannot be considered.

Veterinary sanitation, dealing as it does, with the investigation, control and suppression of contagious and communicable diseases of domestic animals, and with the inspection of our meat and milk supply, has opened up a vast field of employment for scientific veterinarians. Such work is just beginning in this country, but during the next ten years will spread over the entire face of our country, bringing into requisition the services of those veterinarians who have qualified themselves for this most remunerative, scientific, and best appreciated branch of veterinary science.

*Philadelphia.*

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## **VETERINARY PRACTICE IN THE WEST.**

**By S. D. BRIMHALL, V. M. D.,**

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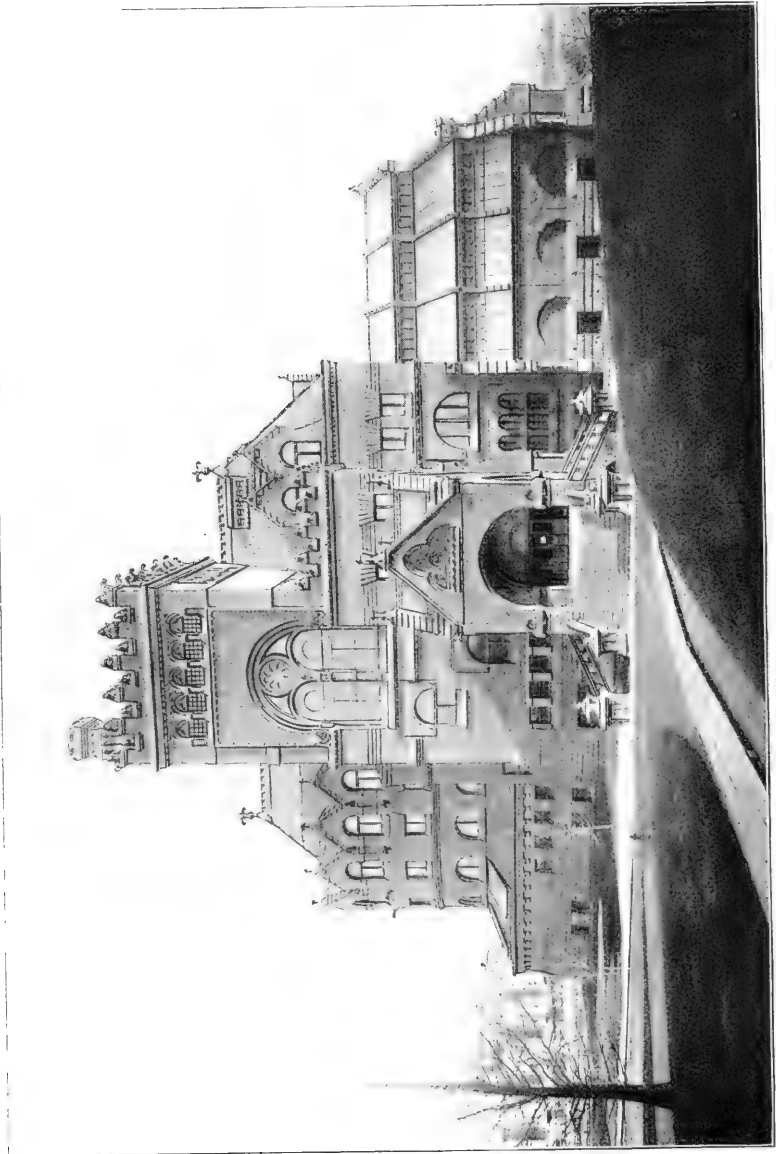
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Fifteen years ago, the practice of veterinary medicine in the West was controlled by quackery and empiricism. But the western public is gradually becoming alive to the fact that the veterinarian of to-day is a worthy citizen, who should be recognized as an authority on all diseases of domestic animals and as a guardian of public health and of the wealth of agricultural districts.

The stock interests of this great Western country are of vast importance and grand proportions, representing a money value of many millions. These vast flocks and herds must be protected by the veterinarian from the fatal contagious diseases which threaten them on all sides. A great many of the Western States now require the services of a state veterinarian and assistants, besides a



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veterinarian at their experiment stations. The government needs veterinarians as inspectors at the great stock yards of the West, and many of our cities employ them as meat and dairy inspectors and as salaried veterinarians to the fire and police departments. Many of the large stock farms and breeding establishments have veterinarians in charge. The field of general practice is very broad and, in our large cities, offers, as a remuneration to the best practitioners a yearly income of \$5000 to \$10,000.

The young man *who has a thorough knowledge of his profession*, and who will deal honorably with the people, will find that in the West he can provide well for himself and family and be of great service to the public.

*Minneapolis, Minnesota.*

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## THE VETERINARY PROFESSION IN THE SOUTH.

By **GEORGE O. JOLLY, V. M. D.,**

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The veterinary profession though still in its youth in the North, East and West, is in its infancy in this section of the country, but is fast becoming worthy of notice. The word *Veterinarian*, from what I can learn of the older residents here, was hardly understood a few years ago by any except horsemen and perhaps a few others who keep "posted;" but the advent of the graduate veterinarian, myself I think the second to locate permanently in this city, has changed things to such an extent that practice is not now confined to shippers of stock, the race track, breeders, etc., but has extended to all farm animals, to dogs, principally hunting dogs, which are very numerous in this section of the country, and to

horses in private use. Since my coming here three years ago, I have seen great changes. There are now a dozen or more graduates scattered over the State, and from what I can learn of the different stockmen, most of them are financially successful and are attaining quite a reputation.

In advancing the veterinary profession in the State of Alabama, too much cannot be said of the work and assistance of Dr. C. A. Cary, State veterinarian, and teacher of veterinary science at the Auburn State College. Through his integrity and foresight we formed a society known as the Alabama Veterinary Medical Association, which holds its annual meetings in October. This association has brought the veterinarians of Alabama together, to the advantage of all concerned. Any reputable graduate who sees fit to locate in the State, will be given a cordial welcome if he will send his name to the secretary, which office at present I have the honor of holding, and I will take pleasure in sending him a copy of the By-Laws and Constitution.

During 1896 Montgomery built a Union slaughter house, with the latest modern appliances, where all cattle are slaughtered under veterinary supervision. All herds supplying milk to Montgomery are tested with tuberculin and the diseased ones are killed. These innovations and the interest shown by the city council and the city physician, have done much to stimulate the veterinary profession and show the public its usefulness in this State.

The great depression in the value of live stock shipped here is at present a detriment to the veterinarian. Owing to the great depreciation in the value of live stock during the last five or six years, breeders of horses and mules have decreased their business to such an extent that in a few years the demand for these animals will be greater than the supply; from this time on I expect to see horses and mules



gradually increase in market value. The raising of fine horses is quite an industry in some sections of this State, and this has a tendency to somewhat hold in check the harmful influences of the cheaper ones that are shipped here. Alabama can boast of McCurdy's Hambletonian, one of the greatest sires the world ever knew, and considered by many the best. His "get" are scattered all over the State, as well as over Tennessee. One of our principal industries is the raising and selling of mules. Over 5000 mules were sold in this market last year; Atlanta is one of the greatest mule markets in the United States.

The diseases most prevalent here are osteo-porosis, periodic ophthalmia and tetanus, while of course there are all sorts of cases in general practice. I dare say that the South has more of the above three diseases than any other section of the country.

Owing to the fact that Alabama veterinarians do not seem to keep a record of the various diseases which they are called to treat, I am unable to give any statistics or percentages of same. Among cattle we have anthrax, Texas fever and tuberculosis. The percentage of tuberculous animals I do not consider very large. I have myself examined two hundred and fifty head of dairy cattle with tuberculin, and found only five which responded to the test. I attribute its comparative rarity in Alabama chiefly to the climate and the manner in which the cows are cared for. They are allowed to run at large the year around, and the stables are open. Owing to the vast amount of pork used here in the shape of bulk meat, the principal food of the negroes, the raising of hogs is one of the chief industries of the farmer. Hog cholera has visited all portions of this State at one time or another, and has caused great losses; for this reason the raising of hogs is not as general as it would be if the disease could be kept out of the State.

In conclusion, I may say that, while the South is an inviting, and, I might say, an almost uncultivated field for pre-emption by veterinarians, yet the most remunerative and most needed work is not private practice, but the dealing with the problems of public health that arise through lack of intelligent supervision of our domestic animals and their food products.

Meat, milk and dairy inspection, and the control and suppression of contagious diseases, should be familiar to him who would hang out his shingle in "Dixie." Fortunately, I had received the necessary training at "Old Penn," and have had no difficulty in gradually working into this pleasant, interesting, remunerative and sadly needed work.

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## **VETERINARY PRACTICE IN THE EAST.**

**By A. H. STREETER, A. B., V. M. D.,**

*Veterinary Department, University of Pennsylvania, Class of '96.*

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In New England it has been the custom since the earliest times to send for aid if sickness existed on a farm, whether among the family or animals. If a child was ailing a physician or an "Herb Doctor" was sent for; if the child recovered no one could have treated the case better, if it died it was the will of Divine Providence and no one could thwart that. But as time moved on apace people saw the folly of this course of treatment, for then, as now, recovery occurred most often when the case received the most skillful treatment. So medical schools sprung up throughout our broad land and the skilled physician is found in almost every town. People are willing to pay well for intelligent aid when sickness has

disabled one of the family. What is true of the physician is also true of the veterinarian.

Intelligent men, whether farmers or business men, have become tired of sending for a man to treat a valuable animal that is sick who knows little of the disease, less of the construction and constitution of the animal and nothing of the action of the drugs which he gives. The educated, intelligent, upright, skillful veterinarian is a welcome citizen in any eastern community where the field is not already occupied. He is taken into the confidence of the people and welcomed as a friend.

In the East the live stock industry has reached its highest development and greatest specialization; it has been carried to extremes. It must needs be so, for the market is of the best and the land poor and costly. Every animal must be made to do its best in its special sphere. Here a sick animal means loss, even if it recovers perfectly without treatment. The thrifty farmer seeks aid at once to assist his animal to a speedy recovery and to restore it to a profit-earning condition.

The losses sustained come more frequently from excessive specialization and over-feeding than from contagious disease, although hog cholera is becoming more and more familiar to the people of the East as a result of increasing shipments of swine from the West. Anthrax and ergotism are almost unknown, but tuberculosis, like the poor, is always with us, and is likely to stay *under the present state of education*. The alarm that resulted from the discovery that tuberculosis of cattle and "consumption" of man are caused by one and the same germ, and that the disease exists among many of the best herds, has, to a great extent passed away. Now, intelligent men who read the papers and see so much both true and false on both sides, are only too glad to find a man

who has studied the question unbecogged by the sensational newspaper reporter. They come to him on all occasions with questions, some of which can and some of which cannot be answered. They usually accept the answer of a good veterinarian as final. The stock-men fear the disease and are only too glad to get skilled advice to assist them in the matter. That heavy losses have been sustained by the breeders of blooded stock from this source no one doubts.

There are other contagious diseases that cause great losses to stock owners such as distemper of horses, dogs, and cats, diarrhoea in calves and lambs, thumps in pigs, contagious abortion of cows, etc. Parasites are another source of trouble and loss.

The fact that horses are cheap just now is no reason why a good veterinarian cannot prosper. It is rare that a horse is not worth treating; moreover, horses cannot long remain at the ruling prices. Many of our leading farmers are again breeding their mares. The present low prices are the inevitable result of the ruinously high price of a few years ago. According to the United States Department of Agriculture horses have increased 35 per cent during the last sixteen years and decreased in value only  $18\frac{1}{2}$  per cent. This being true, good serviceable horses of any and every kind will soon be back to their former level. The work of the veterinarian in the East is by no means confined to horses; he must be "up to date" on all cattle diseases, feeds and the most profitable methods of utilizing and caring for stock of all kinds. Sheep must be treated, also pigs. Although the pig is very disagreeable to handle, he responds very satisfactorily to treatment. The dog is of a good deal of importance all through the East, so one is enabled to render valuable assistance by treating it.

The veterinarian must be a student of animal habits, and know what is necessary for each to maintain a healthful and thrifty condition.

The cities and large towns contain many uneducated, so-called veterinarians, "horse-doctors" and the like who proclaim their superior knowledge upon every opportunity. Men don't need to be told how much a man knows, his work soon reveals the facts and the less he says about his own qualifications the better.

The East is calling for good all-around veterinarians who know how to treat any animal, the causes of disease and effective preventive measures. Such is the man who gets the work, he is valued and the stock owners will do all they can to keep him in their locality. But the East is no place for conceited, half-educated, half-prepared veterinarians; they will not prosper; there is no work for them; they had better go elsewhere.

The work is interesting, enjoyable and elevating, it is hard, but none too hard to keep a man at his best. It must be attended to, never neglected. The competent veterinarian with good business principle who locates in the East is sure of a good living, an opportunity to educate his children and to leave a competency to those who come after him.

*Cummington, Mass.*

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## **STATE VETERINARY SERVICE.**

By **LEONARD PEARSON, B. S., V. M. D.,**

*State Veterinarian of Pennsylvania.*

*Veterinary Department, University of Pennsylvania, Class of '90.*

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Veterinary schools were established more than one hundred years ago, by nearly all of the governments of Europe, for the purpose of training veterinarians to take charge of the work of suppressing the infectious diseases of animals,

particularly of cattle, and to serve in the armies. The matter of private practice was not considered when these schools were established. It soon became evident, however, that there was a demand for veterinary services outside of civil and military employment under the governments. In response to this demand veterinarians engaged in private practice. As it was found that their services were valuable, their range of practice grew until, in some countries, and especially in the United States, general practice became more important as a source of livelihood for veterinarians than any form of public employment. There were two reasons for this: Our country was slow in recognizing the value of State veterinary service, and private practice is usually more independent and remunerative.

The first public veterinary positions that were established in this country were under the National Treasury Department, which organized a Cattle Commission in the early seventies for the purpose of controlling the several outbreaks of contagious pleuro-pneumonia that had resulted from the importation of diseased cattle. After a few years' experience it was found that this organization could not meet the needs of the situation, so in 1884 the Bureau of Animal Industry was established in connection with the Department of Agriculture at Washington. Under the able direction of Dr. D. E. Salmon, the field of usefulness of the Bureau of Animal Industry has constantly enlarged. From a mere handful of veterinarians engaged in the suppression of a single disease of cattle, it has grown until we now find it comprising a large number of divisions, with its agents stationed in all portions of the United States and engaged in investigations of outbreaks of diseases, in the employment of measures for the suppression of dangerous maladies of farm animals, the inspection of meat in all abattoirs in which cattle are slaughtered for interstate or interna-

tional trade, the inspection of cattle imported and exported, the enforcement of the Texas fever regulations and the active work of the Dairy Division. The officials employed in all of these branches of work, most of which is purely veterinary, number several hundred and the operations of the Bureau have proven to be of such vast importance and value to the country as to justify an expenditure of more than \$500,000 annually. *This expenditure has undoubtedly saved millions upon millions to the nation and has made it possible to develop the most profitable branch of our export trade.* No other expenditure of the government yields a more direct and valuable return.

But it is not possible for the Bureau of Animal Industry, a national organization, to infringe upon the functions of State government and the States have found that it is to their benefit and interest to establish veterinary organizations through which their local functions can be exercised and contagious diseases of animals investigated and measures taken for their suppression.

The live stock industry constitutes the foundation of agriculture and of national wealth, and the prosperity of the country depends principally upon its rural population. No more convincing argument than this is needed to show the importance of preventing the ravages of diseases which, if uncontrolled, would devastate the live stock industry and ruin agriculture. The total value of the live stock on farms in the United States, excluding poultry, is about \$2,000,000,000, and in most States the live stock industry leads all others.

State functions, in so far as they relate to the protection of the live stock industry, are exercised through veterinarians working with veterinary boards, cattle commissions, live stock sanitary boards or commissions, boards of departments of agriculture, boards of health, etc. Nearly every State has a

regularly appointed state veterinarian, who is sometimes aided by a corps of assistants. In some States the live stock interests of each locality are looked after by an assistant or deputy state veterinarian.

The diseases that come within the domain of state veterinarians are numerous and important. They affect all classes of live stock, including poultry, and cause losses aggregating millions of dollars every year. (*The single disease, hog cholera, destroyed \$35,000,000 worth of property last year, and there are other maladies as destructive*). Some of them are well understood, and the measures to be taken for their suppression are plain and simple. Others are not well understood and in these cases it is necessary for the State officer to possess much skill and judgment. Sometimes diseases are met with that are new or of an irregular and poorly understood type, and some of the more common diseases are but poorly understood in respect to their etiology, method of transmission, etc. In these cases research is necessary, and the state veterinarian should be provided with a research laboratory, and should have a sufficient knowledge of the methods employed in original work, and know enough of pathology, bacteriology and chemistry to enable him to solve many of these difficult and important problems.

The subjects of meat and dairy inspection are now coming prominently before the public and their vast importance both to the producer and the consumer is being more fully recognized. The owners of abattoirs under the inspection of the United States Bureau of Animal Industry, appreciate the importance of this work to such an extent that they encourage it in every way. The local butchers are also beginning to realize that a similar inspection would be of advantage to them and as boards of health and sanitary authorities grow to realize the advantages of a thorough system of



meat inspection from their standpoint, the practice of examining all animals intended for human consumption will increase and a general, far-reaching system of meat inspection will be established. In the same way, the inspection of milch cows and of dairies will be demanded by the consumer for his protection and by the producer for the market-advantage that it will give. This development will make large draughts upon the veterinary profession and the rapidity with which these new systems will grow will be in direct proportion to the ability of veterinarians to respond adequately to the demands for their services.

But it is not necessary to wait for the future to provide useful and desirable positions for veterinarians in State veterinary service. The greatest difficulty that confronts those who are responsible for the enforcement of public measures for the suppression of diseases of animals lies in the difficulty of obtaining the assistance of a sufficient number of well-trained veterinarians; men who have had the advantages of a thorough course of instruction and whose powers of observation have been cultivated in well-attended clinics and whose minds are disciplined by carefully conducted laboratory work in such branches as anatomy, physiology, chemistry, pathology and bacteriology. For men of this kind there is great need. The importance of veterinary work is more fully realized each year, but the demand for veterinarians is discriminative and as the lower ranks of the profession fill there is more and more room at the top.

*Philadelphia.*

## CITY VETERINARY SERVICE.

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By **J. C. McNEIL, V. M. D.,**

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*Veterinary Department, University of Pennsylvania, Class of '89.*

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The time is now at hand when all large cities and many of the smaller ones recognize the necessity of the educated veterinarian, and carry one or more on the city pay-roll as salaried officers. Our city fathers and heads of departments recognize the value of the training furnished by veterinary schools when they place in the hands of their graduates the purchasing of all the animals used by their city, namely: for fire department use, for police patrol vans, for mounted police and the heavy draught animals for street and general purposes. They believe that the veterinarian is best able to judge of the soundness, age, speed, conformation, disposition and general adaptability of an animal for each peculiar class of work it may be required to perform. It is no easy task to make these selections, and the responsibility is very great. That his work may be successful, the veterinarian must possess good judgment, sound common sense and sterling honesty, in addition to professional knowledge of a high order.

The question of feeding is usually referred to the city veterinary surgeon, and who should be more capable of judging of the kinds, quantity and quality of food to be given the city's stock, that it may yield the greatest benefit to the animal and to the purse of the taxpayer. Judicious feeding is of great importance, and is a great saving to any municipality, but I fear that this subject is not looked after very carefully in many cities, and the heavy death-rate and enormous feed bills may in a large measure be due to so little importance being given to this question.

Shoeing, whether normal or pathological, requires the services of the veterinarian, and here again experience and professional skill play a most important role. While the city does not expect its veterinary surgeon to be an expert farrier, still he should be so proficient in the art of horse-shoeing that he may be able to direct the work to be done. He is very frequently called upon to recommend the class or kind of shoe to be used, the manner of adjusting it, and must know when his directions have been carried out in a skillful and workmanlike manner. The animals used for fire and police service stand on hard plank floors for an average of twenty-two hours out of every twenty-four, and special care must be taken that their hoofs do not become too hard or contracted. He must also direct how long a set of shoes may be allowed to remain on.

The care and treatment of these animals in disease or when suffering from injuries, tries the medical and surgical skill of the veterinarian. The remedies and methods employed are the same as in general practice, but the character of the work fire- and police-horses are called upon to perform is very violent and predisposes to such diseases as congestion of the lungs, pneumonia, pleurisy, bronchitis, laryngitis, laminitis, pericarditis, endocarditis, azoturia, enteritis, etc., to say nothing of the fractures and other traumatisms that might be looked for when animals are driven at such great speed with enormous loads over the hard and slippery city streets. The average service of a fire or patrol horse is about three years, and in some cities it is less than this short time, but with proper veterinary supervision it can always be increased.

The veterinarian should also have a knowledge of bacteriology and pathology, since the manufacture of diphtheric antitoxin is carried on by a number of our larger

cities, and it is most essential that the blood be taken from animals that are in a perfect state of health. This is a most important duty of the city veterinarian, as he is the only person capable of diagnosing the peculiar ailments of the horse, and should he err, the result might be very unfortunate. The treatment of disease in the human family by the use of serums is, I believe, only in its infancy, and as new discoveries are being made in these lines it will open up a new and greater field for the skilled veterinarian in connection with the preparation of these substances.

In conclusion follows what I believe to be one of the most important duties of the city veterinarian in his connection with the Bureau of Health. It is he who should be, and who usually is, called upon to give his opinion regarding the meat and milk supply of the city. The enormous percentage of deaths in the human family, and especially among children, which have been ascribed to impure and unwholesome milk, is most alarming. Tuberculosis causes one-eighth of all the deaths of the human race, a record which no other single disease approaches, and now that it is believed that this disease may be communicated to man from animals, most cities are taking steps for their protection and are looking forward to a much better meat and milk supply. I might say in this connection, that in the examinations personally made by me in the immediate neighborhood of this city during the past year, I found a large percentage of all cows examined to be tuberculous. The report of the Commission on Tuberculosis of the State of New York shows that of the 22,000 cattle examined during the past year seven (7) per cent. were found to have tuberculosis. My own opinion is that the percentage in this State is probably as high as that of our neighbor, and it is always greatest in the thickly-populated districts or near large cities. The people are

rapidly becoming educated to these facts and conditions, and are demanding city and state legislation that will provide a safeguard against an impure meat and milk supply. This subject of meat and milk inspection, when carried on upon scientific lines, demands a very considerable amount of work, energy and skill.

Fortunately, the position of city veterinarian is not often dependent upon political qualifications rather than upon professional skill, for in the larger cities the heads of departments recognize the importance of surrounding themselves with men who are honest and capable and whose work will reflect credit upon the individual and on the administration. In our largest cities, these positions are covered by the civil service regulations, and appointments are based upon competitive examinations. There is every encouragement for a young man to take up the study of veterinary medicine, and he may feel that his success in his chosen profession will be in direct ratio with his knowledge, skill and honor.

*Pittsburg, Pa.*

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## VETERINARY WORK IN CONNECTION WITH THE DUTIES OF A BOARD OF HEALTH.

By **CHARLES E. COTTON, V. M. D.,**

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The need of a veterinary member of local and state boards of health has been recognized by comparatively few of our States and larger cities up to the present time.

Under the Mosaic law, the Jews from time immemorial have had a meat inspection based on their religious belief.

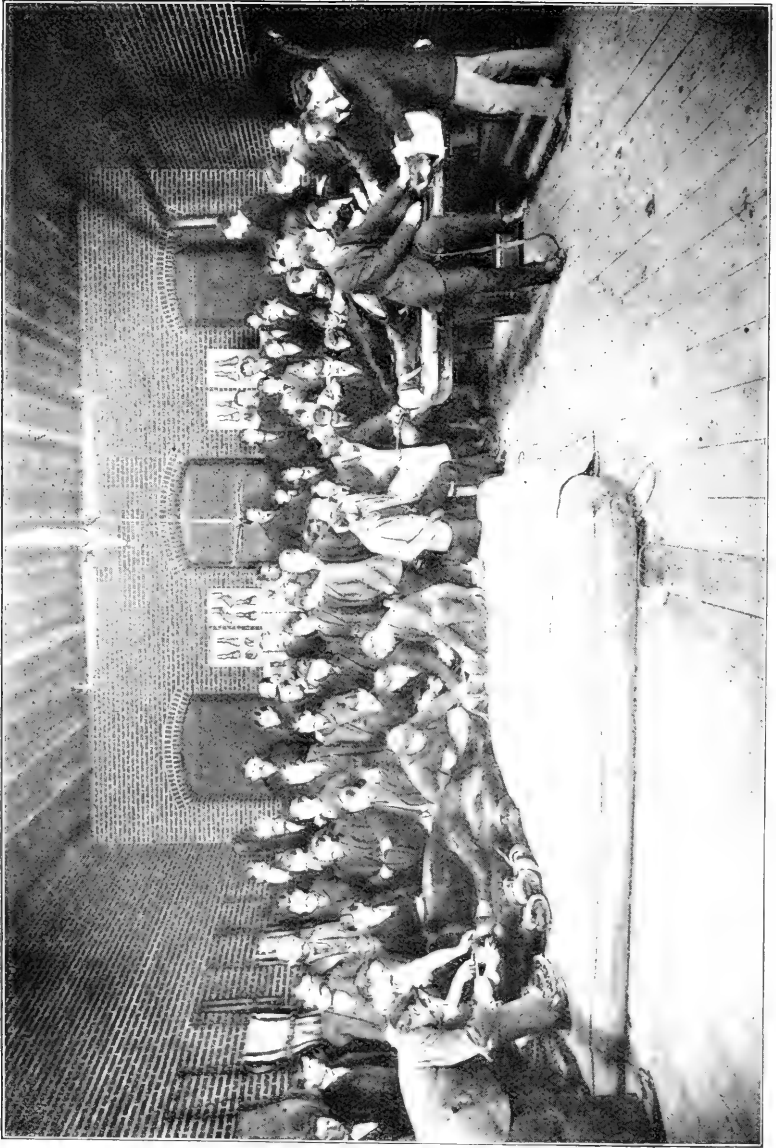
Such inspection was, of necessity, far from scientific. Scientific meat inspection dates from 1874, when Germany passed very stringent laws for the purpose of excluding diseased meats from the market. This required a trained corps of scientific veterinarians, well versed in microscopy as well as the grosser methods of detecting disease in both live and slaughtered animals. This action on the part of Germany led, naturally, to the employment by the United States government of skilled inspectors at export ports and the large packing-house centres. But it is only recently that the health boards of large cities have realized the necessity of such inspections in their home markets. This demand on the part of local health boards will, in the near future, open a comparatively new field both pleasant and profitable to the men well trained in veterinary science, and one in which most valuable public service can be rendered.

Another duty of the veterinarian of the health board, is in connection with the control of the contagious diseases of animals that may be transmitted to people. A law compelling veterinarians to report any cases of glanders, rabies, anthrax, tuberculosis, or other contagious diseases which he may find in his practice, would materially assist the health boards in the control of such disease. The absence of such laws necessitates great vigilance on the part of the veterinarian of the board. In some sections there should be periodical inspections of all large stables, suspicious cases quarantined and all cases of glanders destroyed and stables thoroughly disinfected. In our city alone during the past year we have condemned 109 cases of glanders.

The question of rabies is also of importance in that great harm has been done through the fear of hydrophobia, where in many instances there has been little occasion for it. We have found it practicable to require the policemen to capture



GROUP OF VETERINARY STUDENTS AND HOSPITAL PATIENTS, UNIVERSITY OF PENNSYLVANIA.



OPERATING ROOM, VETERINARY HOSPITAL, UNIVERSITY OF PENNSYLVANIA.



vicious dogs that have bitten people, take them to the pound where they are kept under the observation of the veterinarian of the board of health for three weeks. If, during this time, rabies develops, then there is ample time for the person to receive proper treatment. If not, the people are so informed and this sets at rest any further fear of future trouble.

The demonstration that tuberculosis is one and the same disease in both animals and men, has opened up a new field for useful work on the part of both local and State boards of health. Heretofore, the attempt to eradicate tuberculosis from the dairy herds has been undertaken by State cattle commissions. The most extensive work under State control has been in the eastern States, and has, for various reasons, thus far, resulted in only partial success.

The need of absolute purity in the milk supply makes the eradication of tuberculosis a necessity. It is claimed here that this is practicable only by the local boards of health controlling their own milk supply by issuing licenses to both producers and venders, after a thorough inspection of the dairy and cattle by the veterinarian of the board. This plan is now being carried out in our own city, under a local inspection ordinance made possible by a special act of the State legislature. The constitutionality of this measure has been confirmed by a decision of the Supreme Court of the State of Minnesota.

These few special lines that we have dwelt upon may serve to illustrate the value of the services of a competent veterinarian to the health boards of either a city or State.

A thorough knowledge of practical sanitation, bacteriology, microscopy and meat inspection, outside of the knowledge demanded of a veterinarian in general practice, will of course be required on the part of anyone who hopes to obtain

such a position and fill it with credit to himself and the school from which he received his training.

*Minneapolis, Minn.*

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## **A COURSE IN VETERINARY MEDICINE PRELIMINARY TO ADVANCED WORK IN MEDICINE.**

**By W. M. S. CARTER, A. B., M. D.,**

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Unquestionably the greatest progress made in medicine in recent years has been in preventive medicine. The future promises even greater things, which in all probability will result from further investigation of the causation of disease. We are now beginning to hope that the day is not far distant when we can cure the diseases, the etiology of which we now understand. We say *cure* them, for while we have been able to alleviate suffering and place patients under favorable conditions for recovery, or to stimulate them until Nature would cure, we have been unable, until very recent times, to effect this cure ourselves. The day is now dawning when we are beginning to understand Nature's method of curing infectious diseases.

If, for example, we consider tuberculosis (only one of the great group of infectious diseases), it would be impossible to estimate how many lives—both of human beings and lower animals—are annually saved by the care which is now exercised in disposing of the materials containing the germs of this dreadful disease, coming from tuberculous patients and animals. Certainly the number is no small one.

Unfortunately, our efforts in this line of sanitation are not as perfect as we would wish for and many cases still arise.

The prevention of tuberculosis by hygienic methods employed at present is slight indeed, compared with that prevention which we hope for when we shall be able to produce immunity in all who are susceptible to this most terrible of all diseases, which at present causes one death in every seven. This does not seem too much for us to hope for, nor is it looking too far into the future, for these things have been accomplished in the laboratory in several other infections, especially in the case of diphtheria, where the methods have been perfected for daily practice and now result in a very great reduction in the mortality from this disease.

When we understand more of immunity (for we are just beginning to understand it), we hope that it will be possible to *cure* any infection and not only this but to *prevent* it by artificially protecting those who are susceptible. When this is accomplished, the saving of life will be tremendous.

The methods of preventing the spread of infectious diseases, such as tuberculosis, cholera, anthrax, glanders, etc., have only been placed on a firm foundation by the discovery of the cause of these various diseases. The discovery of the cause of a disease is not made by some chance or passing observation of any one dealing with these diseases in an ordinary way. In every instance it has been accomplished by men pursuing special lines of research and has only come after years of patient work by competent men, carefully trained in laboratory methods. It is obvious that such discoveries cannot be made by the busy practitioner, who has neither the time, nor the facilities, even if he has sufficient training in the thorough methods of investigation. The work requires thorough and careful training in technique. However, a man cannot do this without having had also a thorough training in the other important branches of medicine, any more than he can be a specialist in any branch without having first had a

course in all the important branches of medicine. It naturally follows, as in any specialty, that the broader a man's training when he comes to the laboratory the better will be his work, and he will also be much more likely to follow such lines of investigation as will have very practical results. No training could be better adapted for fitting a man to do good advanced work in the prevention of disease than that in veterinary medicine. A knowledge of the diseases of the different species of animals, how some diseases attack certain animals while others escape, how some diseases manifest themselves differently in different animals—all this is certainly a very desirable preparation for one wishing to pursue original research in hygiene.

Bacteriology is the youngest of the medical sciences although, considering its age, very much has been done and is being done at the present time by many investigators. Almost all of this work, however, has been directed to the diseases affecting human beings. The many diseases of the lower animals have not been studied so thoroughly by modern methods as have the diseases of man. Veterinary medicine is, of course, only of comparatively recent development and has comparatively few workers in its ranks. Especially is this true of the branch dealing with the etiology of disease. Certainly there can be no more inviting field nor one offering greater rewards to those willing to work, than advanced research in this line. Nothing could be more attractive to a young man desiring to do scientific work than this branch, for his labors are sure to bear rich fruit almost immediately. In many purely scientific subjects, as in specialties, there is often the danger of one becoming near-sighted or narrow in his line, so to speak. The veterinarian, however, who will devote himself to the study of the etiology of the diseases of the lower animals, with such a broad field before him, can never lose sight of the practical application of his results.

Advanced studies, the results of which may be of great importance in the practice of veterinary medicine, are not necessarily limited to bacteriological study of specific infectious diseases. The study of physiologic chemistry opens quite as large a field for investigation. The study of the many disorders of digestion, with the changes taking place when physiologic processes are not carried out, offers a vast field for research. We understand as yet very little about this important subject, although we daily see cases which from a clinical standpoint are clearly of such origin. We refer to those cases vaguely as "some auto-intoxication," without knowing definitely to what that intoxication is due. Until we can understand what these intoxications are and what they are due to, it is impossible to avoid them or treat them in a rational way.

Not only will physiologic chemistry give us an understanding of these digestive processes, but we also expect that it will throw much light upon the many obscure processes of nutrition. Of the disorders of nutrition we practically know very little, although many pathologic processes are unquestionably of such origin. This is practically an unexplored field and no biologic science is so in need of investigators, although none could offer greater rewards; this is quite as true of human as of veterinary medicine.

The subjects of feeding and foods, although they have received considerable attention, still present many problems to be solved by physiologic chemistry. These subjects are not merely of scientific interest, but are also of the utmost importance to the stockman.

These are a few of the problems which are loudly calling for workers who will solve some of Nature's methods. We believe that no one could be better fitted for such investigation than the veterinarian, and that in no branch of his pro-

fession could he obtain better results or receive richer rewards for faithful, conscientious labor than in such advanced studies.

*Philadelphia.*

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## THE VALUE OF VETERINARY TRAINING TO THE PHYSICIAN.

By **CHRISTOPHER GRAHAM, B. S., M. D., V. M. D.,**

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Side by side the two branches of medicine have developed; each has contributed its share in the development of general medicine. Each as time passed profited by the labors of the other.

In early times the Egyptians practiced veterinary medicine with a skill equal to that shown in human medicine. The Greeks studied and taught both branches of medicine with considerable zeal, and appreciated to a remarkable degree the dependence of human on veterinary medicine. They recognized many diseases communicable to man and advised isolation and other means of prevention. Later, the Romans learning of the Greeks began to add to what was then known and rapidly developed veterinary medicine. Columella in the first century wrote on medicine and surgery, together with sanitary measures for suppressing contagious diseases among animals. In the third century the two branches began to be more clearly defined and veterinary medicine had quite a literature of its own. Down through the Middle Ages medicine withstood the vicissitudes of the times, now in darkness, always in gloom; but withal quite generous additions were made to the science, on which the modern school finds footing.

Since the founding of the veterinary school in Lyons, in 1761, this branch of medicine has rapidly won honors and prominence. It now has schools with requirements equal to the schools of human medicine and a bountiful literature rich, indeed, in scientific truths and full of suggestion to the thoughtful physician. From the time the differentiation took place veterinary medicine has been a clearer-cut science than human. It is based more on practical experience and investigation, observation of facts and the truths and principles derived therefrom. Theories can be tested through sacrifice of life and their falseness or correctness established with certainty.

Medicine, both human and veterinary, has come to mean more than visiting the sick, diagnosing the disease and applying remedies to cure or aid in recovery. Not that medicine has developed beyond bedside care, for much of the physician's time is and must be consumed here. It is in *preventive* medicine that the practitioner of medicine finds his highest calling, and where thoughtful, scientific work is most needed and most praised. Here the veterinarian and physician vie with each other, with the honors well divided.

The flocks must be carefully selected and wisely tended to insure meat and milk fit for human consumption—a matter of vital importance when we consider their universal use and how readily disease is communicable from the lower animals to man. Who will underestimate the valuable counsel of the educated veterinarian in dealing with outbreaks of influenza, cerebro-spinal fever, diphtheria, scarlet fever, and glanders among men, all of which may be suspected, at least, of having their origin in like epizootics among animals? To this list we might well add tuberculosis, foot-and-mouth disease, malignant pustule, trichinosis and rabies. Not only is it important to guard against the directly transmissible diseases,

but we must protect our people from those distressing and sometimes fatal disturbances brought on through eating contaminated meat slaughtered while suffering from lung plague, cholera, etc. Daily, I may say, the physician is confronted by these purely veterinary questions, and if he does not possess the requisite information—learned best and only under veterinary instruction—he must turn to the veterinarian for advice or grossly neglect his charge.

Again, with the idea of preserving the health of animals, as well as man, comes the important question of serumtherapy—the boon of modern medicine. Here the physician and veterinarian look for much, with substantial evidence that their hopes will be realized.

With the full knowledge of transmitting disease by inoculation, who would trust a glandered horse to develop diphtheric antitoxin that is active and at the same time harmless? In this matter the veterinarian or veterinary learning shall and must be respected.

Physiological study has derived its greatest impulse through animal experimentation. Knowledge of the physiological action of drugs is developed through animals, and comparative physiology teaches its application to man. Pathological processes are best studied in animals and, I may say, many can only be studied there in every detail. The disease may be induced and each step from inception to termination carefully watched and weighed. The symptoms are not obscured by an excited, perverted nervous system. Facts establish theories and applied medicine has a firm basis.

The student of human medicine may say that all this is but a part of his field. Strictly, man is the type and the study of man the province of human medicine, while comparative anatomy, comparative physiology and comparative pathology are the broader province of the veterinarian. The



scientific student must enter the field of the veterinarian and he is welcomed, because without lessening the needs peculiar to the veterinarian he adds to his general knowledge.

Another argument, and perhaps one of more importance than all before mentioned, is the training of observation that is offered to the veterinary student. He who is able to diagnose disease has mastered the major part of medicine. When diagnosis fails, nothing can succeed. He who is to succeed in every department of medicine, whether veterinary or human, must be a close observer. The careless physician will partially succeed, for one-half of his cases will be diagnosed by the sufferer or his attendant, leaving for him the simpler part. Not so fortunate the unobserving veterinarian. His only salvation is chance and this means relative failure. I repeat, that *the successful veterinarian, not only may be but must be a close observer of facts.*

In veterinary medicine this opportunity for training is preeminent. To be sure the student is free from many of the peculiar stumbling blocks that hamper human medicine. The neurasthenic, malingerer, monomaniac and the garrulous patient are absent—for which let the veterinarian be truly thankful. The sick animal acts and appears as it feels; every manifestation of pain is a true index of the underlying pathological condition,—the simple expression of an unimaginative mind. The patient gives facts and facts only. He who is misled, misleads himself. Isolate the facts, arrange them logically, and the general truth is readily aduced. This is the only way open to the veterinary student. His future success is limited solely by his power, natural or acquired, to observe facts and carry them to a logical conclusion. The human practitioner must possess this or remain among those classed as very ordinary. The so-called intuitive diagnostician is he who has mastered the science of ob-

servation, and learned to follow his patient's complaint only so far as it bears out his own inferences. Nowhere else in the whole range of medicine is this opportunity to study the unmodified symptoms of disease offered, save perhaps—yet more limited—in the pathology of childhood.

The student of human medicine who looks into the future and properly appreciates the inevitably close competition he will meet can not well lose sight of this profitable source of training.

It seems strange that our medical schools have so long neglected to give veterinary training a place in their course of instruction. The odium left by the English "farrier" that once threatened the usefulness of the veterinarian is almost a relic of the past. The scientific trend of the modern school has done away with any difference and today the scientifically educated veterinarian is the acknowledged peer of the educated physician.

Our medical schools will have taken another long step in the right direction when, following the lead of such broad minds as Bourgelat, Vicq d'Azyr and Talleyrand, they make a course in veterinary instruction the base upon which to build and develop the ideal physician.

*Rochester, Minn.*

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## **HORSESHOEING, AS A SCIENCE.**

**By THOS. J. KEAN, M. D., V. M. D.,**

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Shoeing as a science aims to preserve the functions of the hoofs of horses, mules and asses, to find the most efficient means for their protection during the artificial life these

animals are compelled to lead, to correct or cure their irregularities and deformities, whether congenital or acquired, and in some cases to so modify the gait of the horse in particular as to make him a more suitable and agreeable companion and servant of man. Horseshoeing as a science occupies much the same position with respect to veterinary surgery that orthopedics does to the practice of human surgery, and is naturally and historically a part of veterinary surgery.

The history of veterinary medicine shows that up to the middle of the eighteenth century, when the first schools for the study of veterinary science were established, what little knowledge there was of the diseases of horses was largely in possession of the "farriers." Very much is the case to-day in many parts of our own country, remote from civilization, where there being no veterinarian, the horseshoer is the man consulted when anything goes wrong with the horses in the neighborhood. Because he sees and handles more horses than any of his neighbors, he acquires experience that is valuable in the absence of scientific knowledge.

As schools of veterinary medicine were established and the evolution of the veterinarian began, either because of the pride attendant on his newly-acquired knowledge, or of disgust at the too palpable ignorance of the old farrier, the new expert broke away from his predecessors and left the shoeing of the horse (the cause, either active or predisposing, of nine-tenths of all lameness) entirely to the farrier. Thus it came to pass that the art of horseshoeing, instead of being cultivated as a branch of veterinary surgery, was left in the hands of men ignorant of the anatomy and physiology of the foot, who instead of directing their study to determine how to best shoe the foot to preserve its function, seem to have always held but one purpose in view; namely, that of protecting it from wear.

Now that the horseshoers are aroused to a lively appreciation of their condition, as is indicated by the appeals for education, and the pleas for assistance sent out from every convention of horseshoers, the veterinarian should resume what he should never have been allowed to pass from his hands, and by the intelligence he can bring to bear on the subject, should so improve horseshoeing that it will occupy a commanding place in veterinary science. The impetus and enforcement of this movement must come from men trained in veterinary schools, for from no other source can the necessary knowledge be obtained. That progress will not come from the men whose time is consumed at the forge, is shown by the fact that the men most quoted, who have in the past done most to develop horseshoeing as a science, have, with but few exceptions, never worked at the business. As a rule, the men who are capable of working out the problems of shoeing will not submit to the drudgery of the occupation, because their training leads them to feel assured of success in some less laborious and more lucrative calling. Furthermore, any man working daily at so arduous a business falls sooner or later into routine habits of work that put an end to progress, and he becomes content to go along in the ruts that insure the greatest ease to his back and the most money in his pocket.

Horseshoeing has heretofore offered such meager inducements that men hesitated to properly qualify themselves as specialists, preferring to turn their talents and energy into other lines of veterinary science where success and public recognition were better assured. Horseshoers and horse-owners have heard so often that "horseshoeing is a business that never changes," that "horses' shoes are nailed on to-day as were the first," and that "horseshoeing can never be done by machinery," etc., that many of them have gotten the idea

that it is really incapable of improvement. They do not think that it has reached perfection, but they are too timid or conservative to try anything new.

This is exactly the state of affairs that confronted the qualified veterinarian of a comparatively few years ago, when he came into competition with the old self-taught "horse-doctor." It was thought by many that the experience of the old practitioner was of a *practical* nature and therefore safe, while that of the graduate was held to be necessarily *impractical*, theoretical, and therefore unsafe. All this has passed away. The veterinarian is now given the honor his attainments merit and the old "horse-doctor" is no longer quoted. As the prejudice against the graduated veterinarian passed away, so is that against the scientific horseshoer passing, and as we train more and more men capable of directing the practice of the art, and the public realizes that horseshoeing is a science, and that the new experts are not the theorists they feared, but men of results whose every-day work proves the soundness of their views, and they see that their horses are no longer being experimented upon, but are shod on well-founded principles, the existing prejudice will rapidly disappear.

To the young man looking for an opportunity to better his condition, more especially to him who has served an apprenticeship at shoeing, the study of horseshoeing as taught in a well-organized shoeing-school, offers as ready and as abundant success as any branch of learning within his reach.

*Philadelphia.*

## VETERINARY INSTRUCTION IN AGRICULTURAL COLLEGES.

By **J. C. ROBERT, A. B., V. M. D.,**

*Professor of Veterinary Medicine, Mississippi Agricultural College.  
Veterinary Department, University of Pennsylvania, Class of '95.*

The live-stock industry of our country has become so extensive that nearly every other branch of agriculture is dependent upon, or directly connected with it. We will readily appreciate the importance of this great branch of our agricultural interests when we remember that the live-stock industry of the United States represents a capital of about two thousand millions of dollars, and a yearly production of more than half that amount. Formerly, the current opinion among the farming classes was that the practice of veterinary medicine could be left to the ignorant and illiterate, but they are now beginning to realize that veterinary and human medicine are so intimately connected that a knowledge of either embraces the fundamental principles common to both. Sanitary science as practiced in either realm is governed by the same unchangeable laws.

To the prospective stock owner, no branch of learning is more important than that which teaches him how to select domestic animals for various agricultural purposes, and the best methods of breeding, rearing, and caring for them. During the past few years the agricultural colleges of our country have begun to realize this fact, and, at present, twenty-six agricultural colleges in the United States have a chair of veterinary science. The object of instruction from this chair is to teach the student those rudiments of veterinary medicine that bear directly upon the preservation of the health of stock.

Work in the department of veterinary science is usually confined to the three upper classes, sophomore, junior and senior classes, or to one of them. During the sophomore year a course of lectures is delivered on the various breeds of domestic animals—confined chiefly to horses, cattle, sheep, and swine, their special adaptability to various kinds of work, and their comparative value as meat, milk and butter producers. The influence of heredity and evolution in the formation of breeds and establishing pedigrees, the good and bad effects of in-breeding, cross-breeding, and grade-breeding, and the managements of stallions, brood mares and foals are considered. In the junior year the student studies histology, comparative anatomy and physiology. The time is so limited that only elementary courses can be given. For these classes the college provides a laboratory, with the necessary equipment. It is thus possible to study the *elementary structure* of various organs and tissues of the body, as the heart and the lungs, bone and muscle tissue, blood-cells, etc. Such tissues can be obtained from the frog, rabbit, cat and dog. There are so many points of similarity between the anatomy of man and that of the lower animals that, in the course of comparative anatomy, a text-book of human anatomy may be used, and this is, to advantage, supplemented by lectures, and illustrated by skeletons, dissections, manikins, charts, etc. Every one who has studied anatomy has become convinced that a dissecting-room is the only place to gain a knowledge of it. Recognizing this fact, a dissecting-room is provided, and during the winter term the class is required to dissect such animals as the dog and the cat, and when practicable, larger animals, as the horse. The dissecting is done under the supervision of the Professor in charge, and special attention is paid to the organs of locomotion and those parts most subject to disease and in-

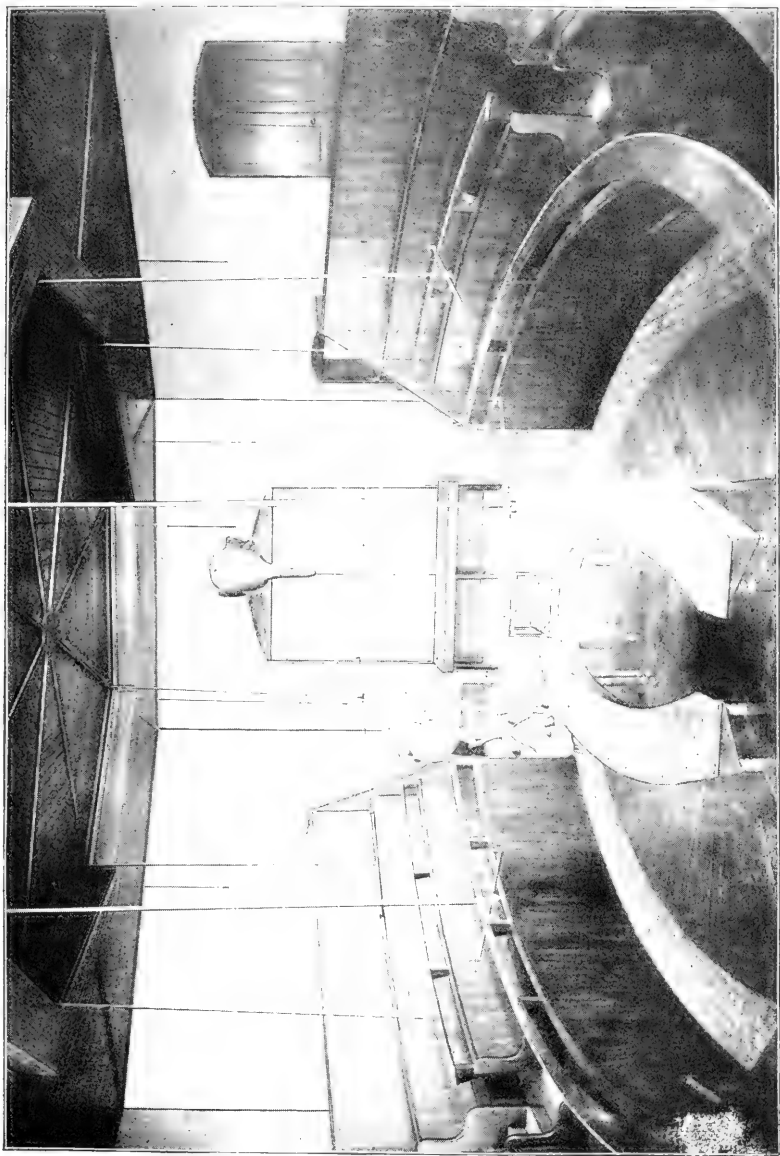
jury. In studying physiology the processes of digestion are considered at length, also the classes of food-stuffs, and laws governing the production, loss, and conservation of energy.

A few lectures are delivered on materia medica and therapeutics, pathology and veterinary sanitary science, but the time is mainly employed in the study of the most common diseases and maladies met with in the lower animals, as fall properly within the province of veterinary practice and surgery.

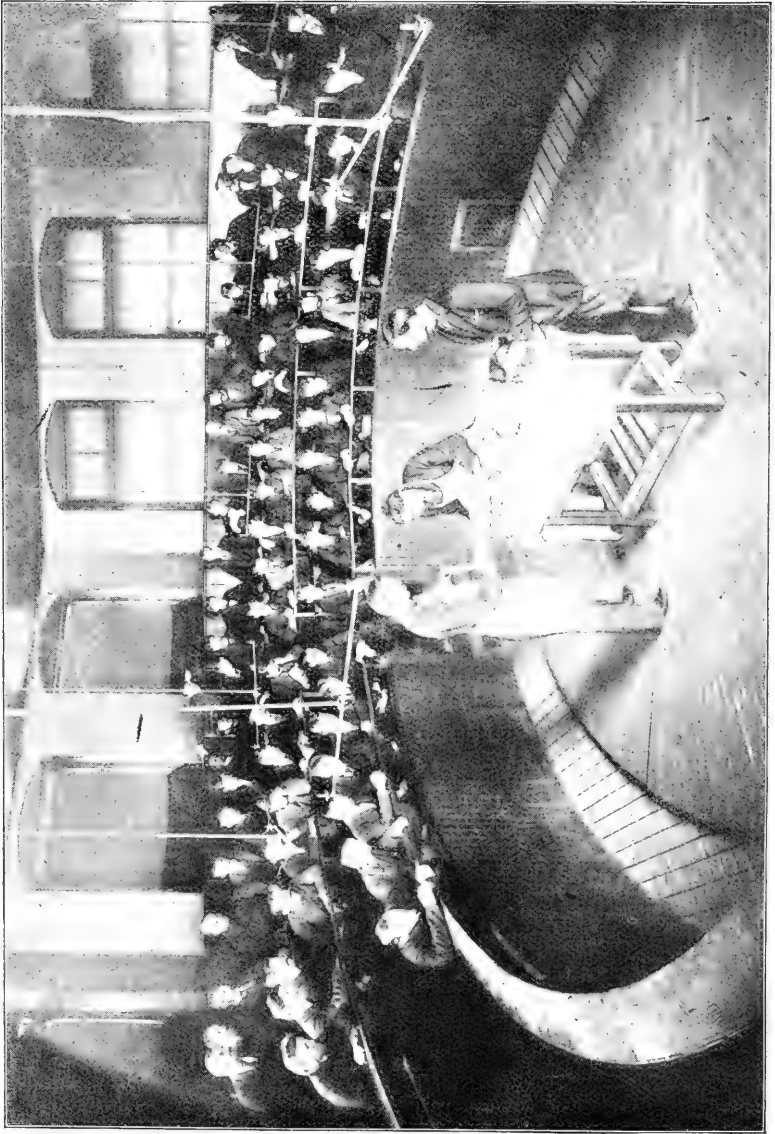
Only the drugs commonly used in treating animals are studied. These are brought from the pharmacy to the classroom during instruction in this branch, and their properties, therapeutic actions, uses, doses and administration are considered. In the work in pathology a short time is devoted to the most common diseased processes that take place in the various tissues of the body, as inflammation, atrophy, and gangrene. In considering non-infectious diseases they are taken up in a systematic order, the principal diseases of each organ and system being studied, as, in the respiratory system, bronchitis, laryngitis, pneumonia, etc.; in diseases of the digestive organs, enteritis, colics, stomatitis, etc. Contagious and miasmatic diseases, as texas fever, glanders and anthrax, are discussed at length. Special attention is paid to preventive measures. The old adage, "an ounce of prevention is worth a pound of cure," is especially applicable to many diseases of the lower animals. If the stock breeder knows that feeding large amounts of concentrated food to a plethoric cow that has nearly reached the stage of parturition is apt to cause parturient apoplexy, he will guard against such unwise feeding and thus prevent a case that might result in death.

In veterinary surgery the best methods of treating sprains, bruises, fractures, etc., are considered; the causes and treat-





A LECTURE ROOM, VETERINARY SCHOOL, UNIVERSITY OF PENNSYLVANIA.



CLINICAL LECTURE, VETERINARY AMPHITHEATRE, UNIVERSITY OF PENNSYLVANIA.

ments of such maladies as founder, spavin, corns, and foot-rot in sheep; the diseases incident and subsequent to parturition are studied; and special attention is given to examination of the horse for soundness.

In the lectures on Veterinary Sanitary Science, the construction, ventilation, drainage, and general cleanliness of stables are discussed; working, feeding, and watering animals; and general laws governing the prevention and suppression (quarantine measures and antiseptic precautions) of epizootic diseases, as hog cholera, texas fever, and anthrax.

Sometimes agricultural colleges equip a veterinary hospital and pharmacy, and at stated times all animals brought to the hospital are treated free of charge. An abundance of material for class demonstration is in this way obtained. Students of the senior class are required to be present at these clinics and observe the various operations. It will thus be seen that the professor of veterinary science in an agricultural college has a broad field to cover and a broad training is absolutely necessary. There is much difficulty in finding the right sort of men for these places, and since every State has at least one agricultural college, and some more, and each agricultural college has or should have a professor of veterinary science, there are places enough to justify any one who has the inclination for this work to fit himself for this very promising and useful field.

*Agricultural College, Miss.*

## MUNICIPAL MILK INSPECTION AS PRACTICED IN PHILADELPHIA.

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By **A. F. SCHREIBER, V. M. D.,**

*Ex-Assistant Milk Inspector, Meat Inspector, Department of Public Safety, Philadelphia.*

*Veterinary Department, University of Pennsylvania, Class of '88.*

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The inspection of milk in Philadelphia was inaugurated in 1889 and Mr. W. J. Byrnes was appointed chief inspector. The department, year by year, has improved both in efficacy and numbers, so that now there are four assistant inspectors, three of whom are graduated veterinarians. The inspection of milk consists principally in the determination of added water, of the extraction of fats and of the addition of coloring matter. The city is divided into districts and each inspector has his regular routes.

The quality of the product is determined by the lactometer at the dairies and shops or on the street from the wagons. When suspicious samples of milk are found, they are carefully analyzed by the chemist of the board of health and when found to have been adulterated the offender is prosecuted in the courts.

Much attention has also been paid to the character of foods fed to dairy animals, the sanitary condition of the stables, etc.; but the work has been difficult, owing to the large territory to be gone over and inadequate laws.

The inspection of city dairy plants cannot be too carefully carried out. In many cases, the animals which are to furnish milk are fed upon inferior foods, such as waste from distilleries and breweries. They are given impure water from polluted streams or wells and are kept in barns with no ventilation; in fact, no attention whatever is paid to their

hygiene, the condition of the animals or the enclosures in which they are kept. In some cases, during the winter months, the cattle are kept in a chronic state of alcoholism, due to swill feeding (distillery mash). In other places, brewers' grains are fed, the barns are polluted with sour, decaying grain, producing fungi and micro-organisms of various characters. If exposed in such an atmosphere a short time milk absorbs these deleterious products, producing an unwholesome and dangerous food.

The modern veterinarian is able to cope with all of the difficulties encountered in the inspection of animals used for milk production only after careful training and determined study. He must carefully note all diseased animals in the herd, especially those showing any symptoms indicating disease of a contagious nature. The milk of animals showing any physical signs of tuberculosis or disease of the udder, eruptive conditions, fever or symptoms of general ill health, is at once excluded from the product of the herd.

Thousands of quarts of milk are annually brought into our city from neighboring counties and States. It is not possible for an inspector to know whether this milk is a wholesome product. Much milk is handled by persons of such unclean habits that it is absolutely criminal for them to sell it.

The amount of water added, the amount of fat removed, the nature of the preservative used to keep the milk sweet or the addition of coloring matter can be determined by the methods in use; but apparently normal milk may contain germs that will produce serious digestive disturbances or more dangerous disease.

Some of the foremost dairymen of this city—those that conduct the largest businesses and receive the highest prices—have organized a more or less perfect system for the

sanitary control of the herds from which they derive their wares. This system is growing and there is such a manifest demand for the assurance of safety that it furnishes that it will eventually become general, either through private enterprise or legislative enactment and then no milk will be sold in Philadelphia except from producers who can furnish clean bills of health based upon a veterinary examination. To the credit of the producers and dealers, it should be said that they are themselves taking the lead in this matter and their efforts will lead to the reform. The reputable and careful members of the trade cannot afford to compete with the slovenly minority.

*Philadelphia, Pa.*

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## THE VETERINARY SERVICE IN THE UNITED STATES ARMY.

By **J. P. TURNER, V. M. D.,**

*Veterinarian to Sixth Regiment, U. S. Cavalry.*

*Veterinary Department, University of Pennsylvania, Class of '90.*

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The present primitive and inadequate veterinary service in the United States army had its origin March 3, 1863, when Congress passed an act abolishing the position of "chief-farrier" and "chief-blacksmith" in each regiment of cavalry, and provided each regiment with one "veterinary surgeon." President Lincoln had previously realized the value of trained veterinary surgeons to the army and had offered positions to several of the best qualified veterinarians of those times, but they refused to accept because the President offered them only the subaltern rank of lieutenant, whereas, they asked for the rank of captain.

Thus this golden opportunity for the development of a veterinary corps was lost to the profession by men who should have accepted the lower rank, proven their ability, made their services a necessity and then demanded higher rank.

When the reorganization of the cavalry occurred in 1863, the subject of veterinary service was again brought up and resulted in the formation of a peculiar position, neither military nor civil, yet one which has much of promise, and which was probably all that could be expected by the poorly trained veterinarians of that time. Each regiment of cavalry was allowed one veterinarian, who was given the rank of sergeant-major, the highest grade of non-commissioned officers, but was not enlisted. This last provision was wise, since, had he been enlisted, all hope of future promotion would have been lost. While given this rank he is yet, practically, a civilian, wearing no uniform, under few restrictions and free to resign at any time. The pay was seventy-five dollars a month with allowances of quarters, fuel and lights, which at that time was equal to the pay of a second lieutenant, the actual pay of a sergeant-major being between twenty and twenty-five dollars a month.

The worst feature of this law was the method of appointment; the veterinary surgeon was appointed by the Secretary of War on the recommendation of the Regimental Commander, and the result was that many of the colonels appointed men who were absolutely ignorant of veterinary medicine, but had traits which were acceptable to the men who appointed them. This system was ruinous to the service.

During the late war little is on record regarding the work of the regimental veterinary surgeons owing to lack of organization, rank, hospital facilities and the constant

moving of troops. At all the large remount depots, such as Giesboro' Point near Washington, where from ten to twenty thousand horses were kept at a time, the Quartermaster's Department hired civilian veterinary surgeons to visit the large hospital stables provided for sick horses, but the service was in many ways unsatisfactory, owing to the lack of authority vested in the veterinary surgeon. Owing to the lack of veterinary supervision, thousands of sick and disabled horses were shot each year during the war.

In the reorganization of the army in 1866, four more regiments of cavalry were added to the army, the Seventh, Eighth, Ninth and Tenth, the two last named regiments consisting of colored enlisted men and white officers and veterinary surgeons. These new regiments were given two veterinary surgeons each, one of whom received one hundred dollars a month and the junior, seventy-five dollars. Thus the veterinary service of these regiments costs one hundred and seventy-five dollars a month as compared with the seventy-five dollars allowed the men in the old regiments.

With the advent of veterinary colleges better qualified veterinarians have from time to time entered the army, who, after gaining valuable experience, have usually resigned to enter the more remunerative civil practice. As none but graduates have been appointed for the last twenty years, the corps has gradually improved, but its official position has remained as it was created in 1863. The cause of this has been conservatism, bad precedents, lack of interest both in and out of the army, no central organization, and lack of rank of veterinarians to back up their opinions.

In most important matters where large sums of money are expended and where veterinary supervision is most desirable as, in the purchase of remounts, for which one hundred and fifty thousand (\$150,000) dollars is expended yearly, the



veterinary surgeon has little authority, nor has he authority to condemn unserviceable horses, to inspect forage, supervise shoeing or look after the veterinary sanitation and meat inspection of his post. All such duties are performed by amateurs, because the veterinary surgeon is not a responsible commissioned officer. He seldom, if ever, has a hospital, and must treat sick and disabled horses in the troop stable, receiving such assistance as he can from the "troop farrier."

The duties of an army veterinary surgeon require him to make a daily inspection of all stables at his post, and to treat all public animals and such private horses of officers as the commanding officer shall require. During the winter he is required to lecture to the officers on hippology, taking up the origin and conformation of horses, shoeing, feeding, saddling and biting. From time to time he is ordered to visit troops detached from headquarters, for the purpose before stated.

His official life is not burdensome, as a rule, for being a civilian, the commanding officer usually grants all reasonable privileges. He is usually permitted to engage in civil practice and to come and go as he deems fit, as long as he performs his military duties satisfactorily. His leaves of absence depend entirely upon the regimental commander, who is responsible for the veterinary surgeon and to whom the latter looks for his orders.

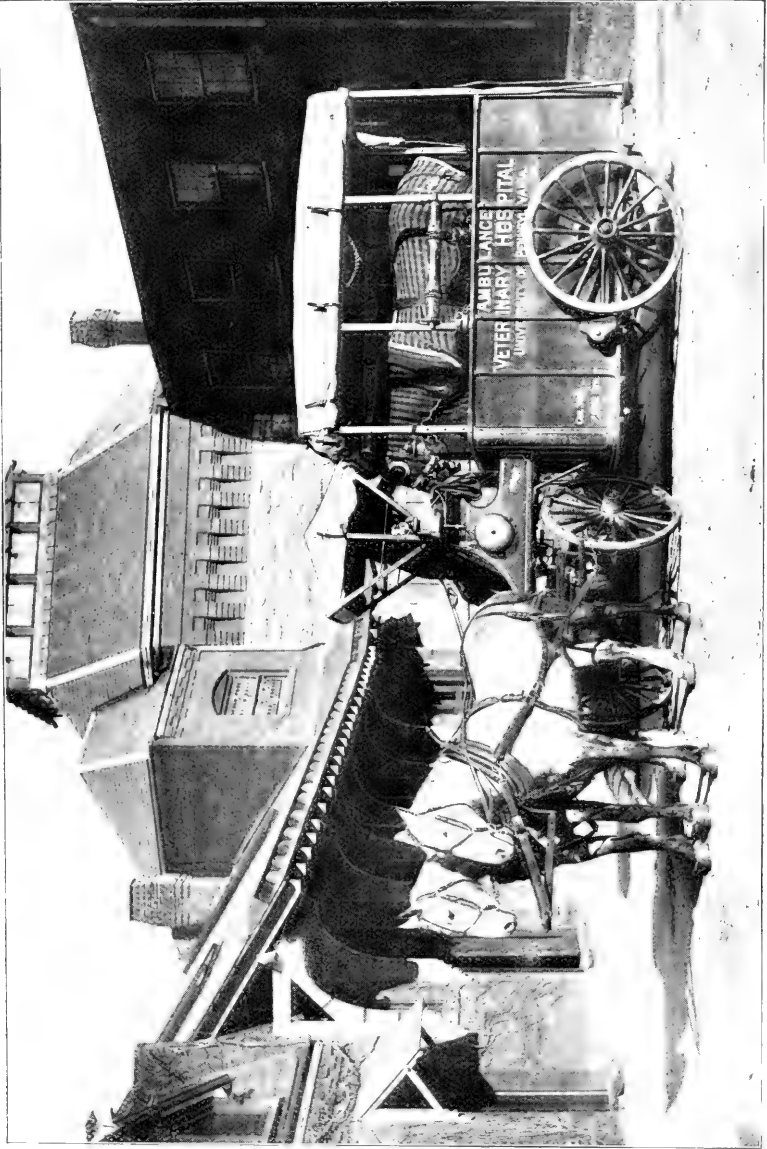
As to the social life of the veterinary surgeon in the service, much depends on his calibre, education, deportment and training; his social position depends largely on himself. The general rule in both military and civil life is that a man's level is fixed largely by his own abilities. Many young men enter the service and resign after a short time, finding the life uncongenial, while others seem to enjoy it.

The position offers a large and varied practice, chiefly surgical, in various sections of the country, due to the frequent change of stations. This work, together with the teaching that the veterinarian must do, is the best kind of training for a young man, whether he remains in the military service or seeks civil practice. The young graduate has something to gain and little to lose in accepting such a position.

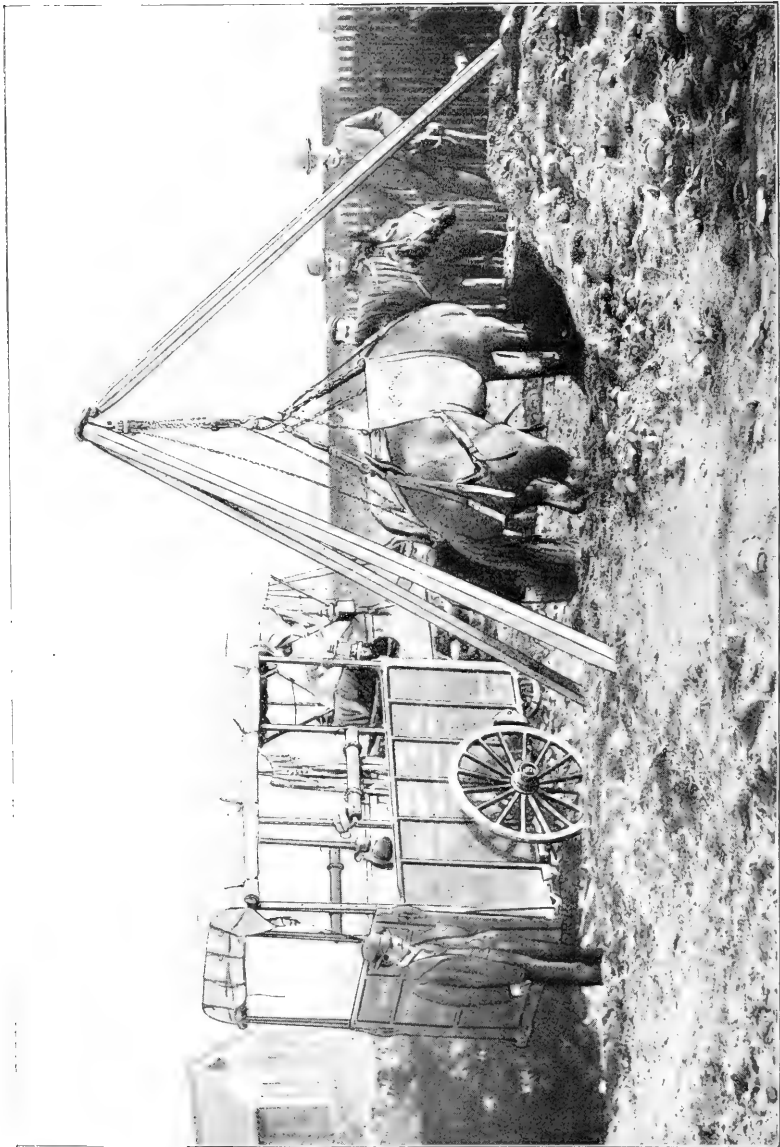
A comparison of the veterinary service of the United States Army with that of other countries shows how primitive our service is, that it does not fulfill the purpose for which it was intended, and that the government loses much by not improving it. The United States Army is the only one pretending to be on a modern basis, which is without a regularly commissioned veterinary staff. The countries of Europe, already overburdened with military establishments, would not keep a corps of high ranking veterinary officers unless it was economical to do so. These officers have proven their worth and the economy of retaining them, by getting sound remounts and by the small death and condemnation rate in their armies. In the British, German, French, Italian, Russian and all other modern military establishments, these officers rank from lieutenant to colonel, and have absolute authority in all matters pertaining to their profession.

It is only a matter of a short time until the United States Army will have a well-organized veterinary corps. A greater interest is being manifested in military and veterinary matters by the younger officers, and improvement is bound to come within a few years. When the inevitable reorganization occurs, and the veterinarian is given the rank, responsibility and equipment that he merits, there will be a demand for highly qualified men for the vacancies.

*Fort Meyer, Va.*



AMBULANCE, VETERINARY HOSPITAL, UNIVERSITY OF PENNSYLVANIA.



TRIPOD AND APPARATUS FOR HOISTING HORSES, UNIVERSITY OF PENNSYLVANIA.

## CANINE PRACTICE.

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By **HOWARD B. FELTON, A. B., V. M. D.,**

*Veterinary Department, University of Pennsylvania, Class of '88.*

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From time immemorial the dog has been the friend and companion of man. Among the lower animals he seems to have been the most richly endowed with intelligence, fidelity and the manifold qualities which endear him and render him indispensable to humanity. The very early domestication of the dog is attested to by the sculptures of Nineveh and the hieroglyphics of Egypt. Among the Egyptians the dog was highly esteemed and venerated. One of their deities, Anubis, is described as having the form and body of a man, but with a dog's head. These were types of sagacity and fidelity. They also worshipped Sirius which they called the dog star, its appearance in the heavens indicating to them the time of the annual overflow of the Nile, and for this reason they associated it with the watchfulness and well-known fidelity of the dog.

The Ethiopians not only venerated the dog, but it was their custom to elect a dog as their king. He was kept in great state and surrounded by a numerous train of officers and guards. When he fawned upon them, he was supposed to be pleased with their proceedings; when he growled, he disapproved of the manner in which their government was conducted.

When Pythagoras, after his return from Egypt, founded a new sect in Greece, he taught that at the death of the body the soul entered into that of different animals. At the death of any of his favorite disciples he caused a dog to be held to the mouth of the dying man, in order to receive his parting spirit; saying that there was no animal that could perpetuate his virtues better than that quadruped.

The Jews were taught to regard the dog with abhorrence and contempt, to save them from the idolatry practiced by the Egyptians. The Mohammedans, perpetuating the antipathy of the Jews, looked upon the dog as unclean, and to this day no more scurrilous epithet can be bestowed upon an unbeliever than to be called "a dog." The Hindoos likewise regard the dog as unclean and if they accidentally come in contact with him must submit to various purifications. They believe that every dog is animated by a wicked and malignant spirit, condemned to do penance in that form for crimes committed in a previous state of existence.

From the earliest known times the dog has been the protector of the habitation of the human being. He was early employed in the herding and care of cattle and sheep. He has always been an indispensable factor in the pleasures and dangers and labors of the chase. As a beast of burden we find him employed at the present day in Newfoundland, France, Belgium and the frozen regions of the North. As an article of food the flesh of the dog was esteemed by the epicures of Greece and Rome. Galen speaks of it in the strongest terms of praise. Hippocrates says that "the meat of old dogs is of a warm and dry quality, giving strength to the eater." Virgil recommends that the fatted dog be served up with whey or butter. On the "gold coast" of Africa, among the Chinese and the North American Indians, and, to a limited extent, in France and Germany, the flesh of the dog is still used as an article of food.

We find that the ancients laid great stress upon the prophylactic properties of different portions of the dog's body. Pliny, Hippocrates, Aristotle and others speak of various preparations made of his flesh for the cure of many disorders. Pliny recommends the ashes of burnt dogs made into a liniment with oil as a healing salve for malignant

wounds, and the internal use of the same article as a preventive or cure for hydrophobia and other distempers. Antiphanes in the year 404 B. C. had discovered the homeopathic cure for hydrophobia, expressed in these lines:

“Take the hair, it is well written,  
Of the dog by which you’re bitten.”

To the employment of the dog in the sports of the chase are we indebted for the first records of his medical treatment. The Greeks and Romans were ardent sportsmen and have left on record rules for the training of the dog and directions for the treatment of the various ailments to which they found he was subject. In the hunting books of the Middle Ages we also find these subjects elaborated upon, but we perceive that during this period the dog, like mankind, suffered greatly from the empiricism and barbarous practices of the times. Worm in the tail and in the mouth have been handed down to us as a legacy.

With the establishment of the Veterinary School at Lyons, in 1761, a brighter era began to dawn for the dog. Recognition of the dog, as a legitimate object of the veterinarian’s care, came slowly, however, and for a long time the regular practitioner looked askance at him, leaving him to the tender mercies of the trainer and the fancier. Gradually, however, veterinarians who were lovers of dogs began to minister to his wants and by their example compelled the profession to recognize this hitherto despised animal. At the present time every reputable veterinary school has its chair of canine medicine, and sends out its graduates thoroughly prepared to treat the ailments of the canine race. The Veterinary School of the University of Pennsylvania has placed itself in the foremost rank by the erection of its hospital for dogs,

the most complete in point of hygiene and adaptability in the United States. While all veterinarians are now instructed in the rudiments of canine practice, all do not become canine practitioners. Many are located in the country where canine patients are few and far between. Others, while they might have the opportunity, have a distaste for treating the dog and resign in favor of the all-round veterinarian or the specialist.

To be a successful canine physician requires a love for the animal and tact and skill in his management. Canine practice opens up an inviting and fascinating field for the veterinarian. In the domain of surgery we find our patients approaching nearest to man in the possibility of performing aseptic operations, in the facility of handling and in the susceptibility to anesthetics. In the field of contagious diseases we find we have yet much to learn in regard to distempers and rabies, the two most dread disorders of the canine race. As we study the therapeutics of canine medicine we find a striking similarity to that of human medicine. It is true that there are a few marked exceptions to this rule, but only a very few, and as new remedies are being constantly discovered in the realm of human medicine, we find that we can apply them in canine practice often with the happiest results.

In the larger cities of Europe canine specialists have established themselves and have attained fame and fortune in the practice of their profession. Following their example many have pursued the same course in the principal cities of our own country. The field is a large and lucrative one, and, with the growing interest manifested in the various breeds of dogs, the outlook seems to be very promising.

*Philadelphia.*



## MORE VETERINARIANS NEEDED.

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We are constantly told that every calling which offers a career and a living is crowded, especially all the professions. There is, we believe, an average of one physician for every 550 inhabitants. Of this number probably one-half do not need any medical attendance; of the remaining 275 a part go to the dispensaries, and the remaining very modest number have to apply themselves vigorously to being sick in order to afford a very modest maintenance to the physician who is allotted to them. Some time since an eminent physician, professor in a medical college, was asked if the profession was not growing crowded. He replied: "Oh, no; it is not growing crowded; it is long since passed that point. It is crowded."

But there is one branch of the medical profession which is not crowded. In the nine schools of veterinary medicine, according to the report of the Commissioner of Education for 1894-95, there was a total attendance of 474. According to the same report there are in the United States 151 schools of medicine, with about 21,000 in attendance. In the excellent department of veterinary medicine in the University of Pennsylvania there were seventy-eight in attendance. In the four medical schools in Philadelphia there were 2029 students.

There were, in 1890, in the United States 161,883,518 horses, mules, asses, oxen, milch cows and cattle, swine and sheep (not including spring lambs), and all of these animals might at times require the attention of a veterinary surgeon. Probably they live more nearly according to nature than human beings, and are, thereby, less liable to sickness. Probably also they are freer from nerves and have less temptation to aggravate their sufferings by talking about them. We have no reason to suppose that there are among them any

millionaires, or wives of millionaires, who find their diversion in being ill and in consulting a physician, although there is probably something analogous to this class of cases among the many million dogs and household pets whose health is shattered by over-feeding and indolence. All the dumb animals the more urgently call for skillful treatment by specialists from the fact that they have no means of making known their feelings and their symptoms. It is safe to say that the money value of these animals may be expressed by billions of dollars. The instinct of interest, as well as of humanity, should lead every owner of domestic animals to seek advice whenever these animals are suffering and to be willing to pay a fair price for their treatment.

And there is a larger interest involved; our relations to the domestic animals are very close. Undoubtedly disease is largely diffused by the use of the milk and flesh of animals which are affected. Milk is an especially favorable vehicle for the diffusion of tuberculosis and typhoid and other disorders. It is of the utmost importance to the community that there be practitioners at hand able to tell when an animal is diseased and to prevent the spread of disease through it.

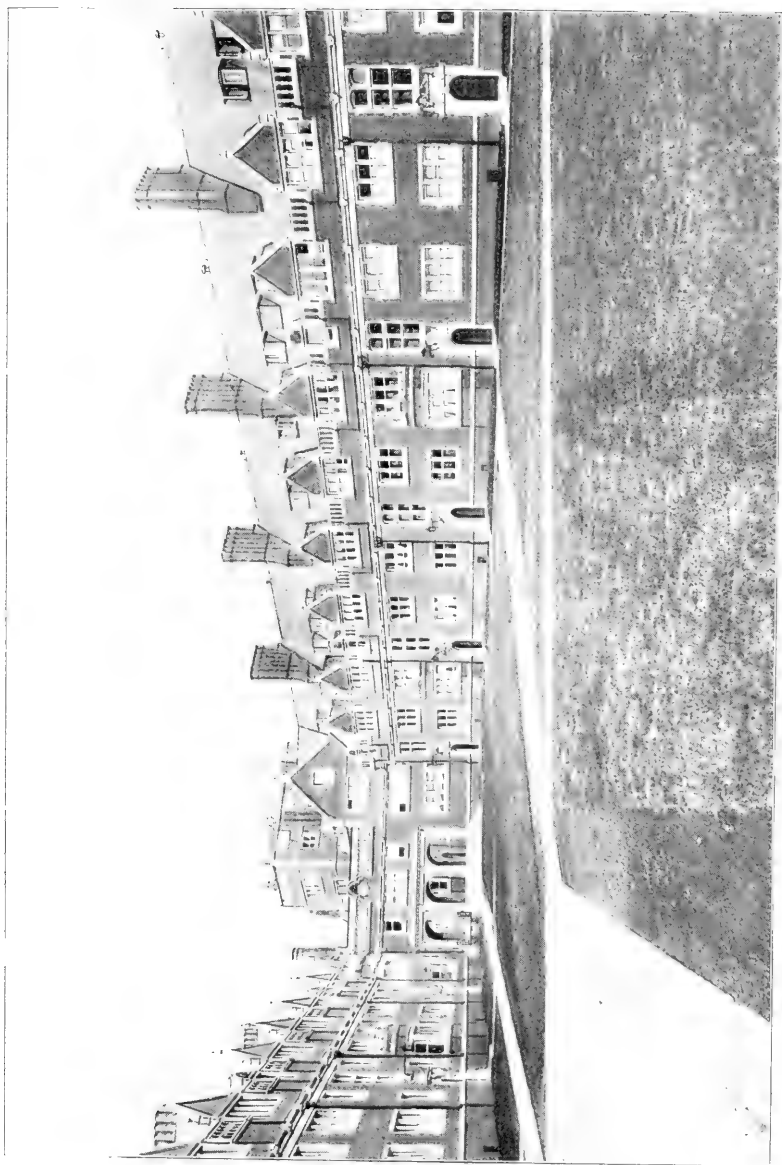
It is quite warrantable to say that in every town of 5000 inhabitants and in every group of towns of smaller size there is a field for at least one veterinary surgeon, and quite probably for more, and that in every large town there is an opening for several. But, in many sections of the country, the veterinary art is practically unknown. The educated veterinarians are not sufficient to supply more than a fraction of the demand. In almost every town the blacksmith is supposed by virtue of his relation to the horse's hoofs, to have a knowledge of veterinary medicine, and there is frequently some practitioner without even this amount of knowledge who sets up in the practice of the profession.

The instinct of humanity, as well as the desire to earn a living, might well lead a great many intelligent young men into the veterinary profession. Probably there is a feeling that socially the position of a veterinary surgeon is not equal to that of an ordinary practitioner of medicine. Of course, if a young man would rather starve genteely in the best society than make a comfortable living among plain people we have no suggestions to make. \* \* \* \* \* —*Editorial, Philadelphia Press.*

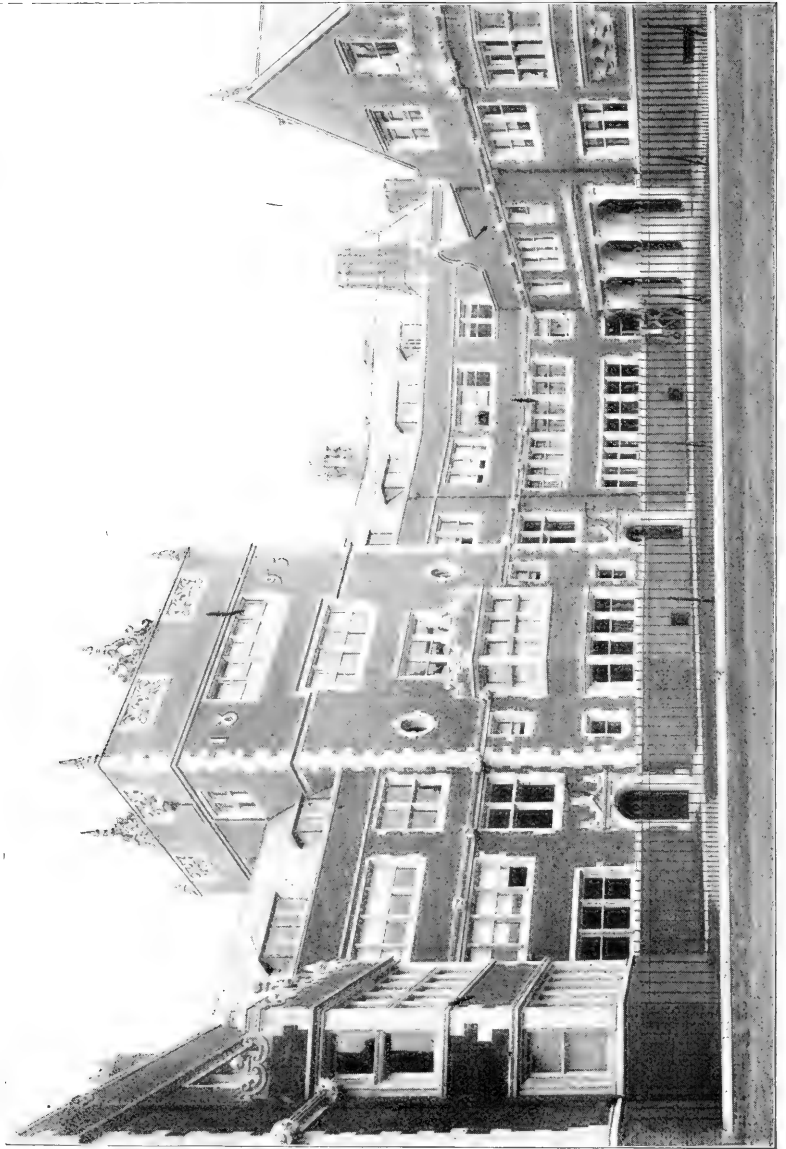
## List of Graduates from the Veterinary Department of the University of Pennsylvania.

["G. P." indicates general practice.]

- ADAMS, JOHN W., A. B., V. M. D., 4019 Powelton ave., Philadelphia.  
Professor, Veterinary Department, University of Pennsylvania.
- ANDREWS, FRANK H., V. M. D., 126 W. Fayette st., Syracuse, N. Y.  
G. P.
- BACHMAN, B. FRANK, V. M. D., Strasburg, Pa. G. P.
- BAER, B. S. J., Ph. G., V. M. D., York, Pa. G. P.
- BANNISTER, H., V. M. D., 1632 Meadow st., Roanoke, Va. G. P.
- BARBER, RAYMOND, V. M. D., Newtown, Pa. G. P.
- BARTHOLOMEW, J. C., V. M. D., Berwyn, Pa. G. P.
- BATTEN, E. C., V. M. D., East Orange, N. J. G. P.
- BEATTY, JAMES, V. M. D., 200 Frankford rd., Philadelphia.
- BERTRAM, FREDERICK DE M., V. M. D., Newport, R. I. G. P.
- BICKEL, S. D., V. M. D., 85 E. Main st., Norristown, Pa. G. P.
- BLACK, HORACE G., 136 E. Market st., Wilkesbarre, Pa. G. P.
- BOWER, HENRY, V. M. D., 1343 N. Fifth st., Philadelphia. G. P.
- BOYD, CHARLES W., V. M. D., Allegheny City, Pa. G. P.
- BRACKBILL, MARSH L., V. M. D., Reading, Pa. G. P.
- BREISACHER, LEO, JR., M. D., V. M. D., 310 Congress st., Detroit,  
Mich. Practice of medicine.
- BRIMHALL, S. D., V. M. D., Minneapolis, Minn. Assistant State  
Veterinarian. G. P.
- BUNTING, F. R., V. M. D., East Burlington, N. J. G. P.
- CARTER, JOHN MORRIS, V. M. D., 32 W. Fourth st., Williamsport,  
Pa. G. P.
- CASTOR, THOMAS, V. M. D., Buffalo, N. Y. Inspector, United States  
Bureau of Animal Industry.
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