CORNELL UNIVERSITY
OFFICIAL PUBLICATION

VOLUME X NUMBER D

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AT THE
NEW YORK STATE VETERINARY COLLEGE
DURING THE
SEMI-CENTENNIAL CELEBRATION
OF CORNELL UNIVERSITY
JUNE, 1919

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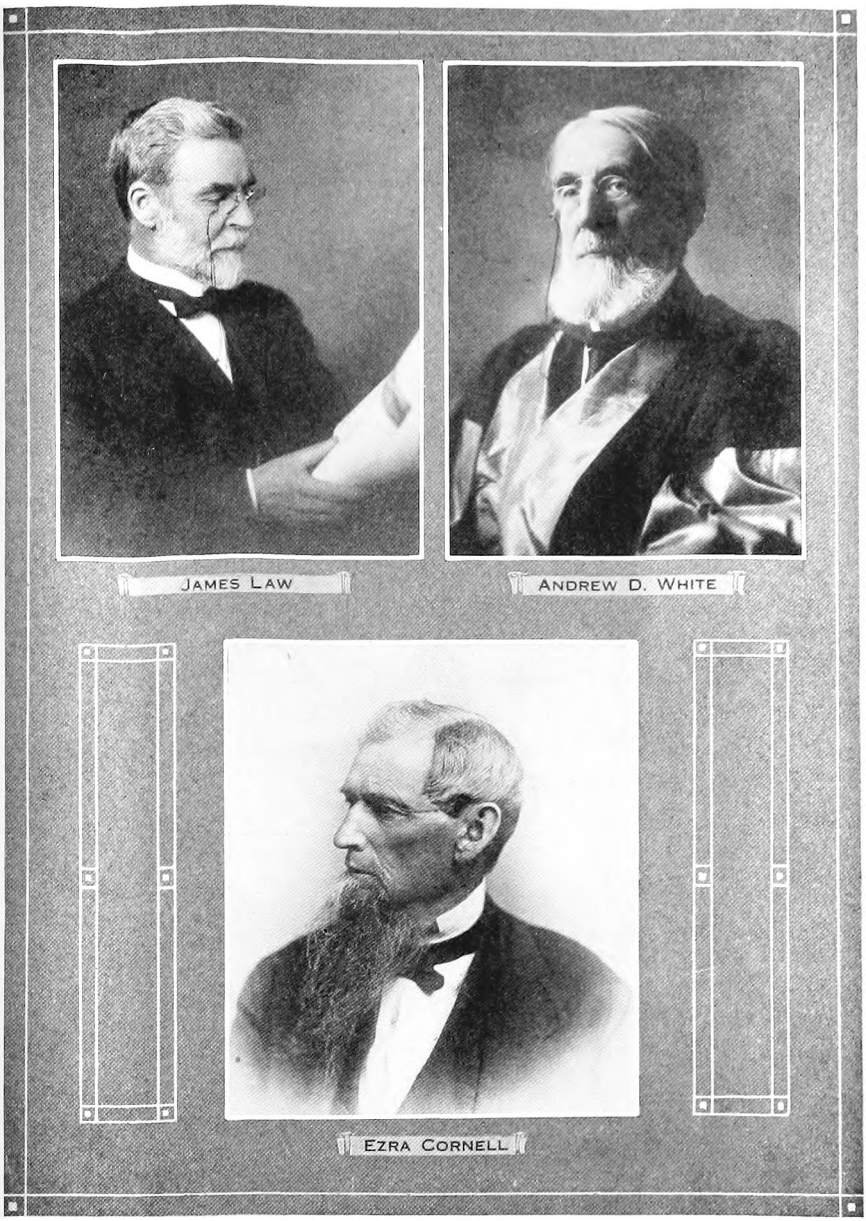

EZRA CORNELL THE FOUNDER OF CORNELL UNIVERSITY, ANDREW D. WHITE ITS FIRST PRESIDENT, AND JAMES LAW ITS FIRST PROFESSOR OF VETERINARY MEDICINE: THE THREE MEN WHO STARTED HIGHER VETERINARY EDUCATION IN AMERICA.

CONTENTS

PREFATORY NOTE

One of the features of the Semi-Centennial Celebration at Cornell University was a Conference, or Forum, in each college for the purpose of ascertaining what changes, if any, should be made to increase its efficiency. In pursuance of this plan, the faculty of this college arranged a program consisting of two parts. The first was composed of papers setting forth the history of veterinary education at the University, the organization and development of the New York State Veterinary College, the problems and opportunities of the veterinarian, the relation of the college to the State, the administration and needs of the college, and its equipment. As these topics are of help to all persons interested in the veterinary profession, it was deemed wise to publish this part of the program.

The second part consisted of the reports of several committees that were appointed from the alumni, which after being discussed by those present were transmitted to the faculty committee on curriculum. The subjects on which the committees reported were: the teaching of animal husbandry; veterinary training preparatory for the army; instruction in the fundamental sciences; teaching the applied subjects; coöperation of the college with the live stock interests of the State; methods of teaching veterinary subjects; and additional subjects or departments.

We are anxious to make the college as helpful to the students and to the live stock interests of the State as possible. To further these ends, the coöperation of alumni and stock owners is earnestly desired. Helpful suggestions and constructive criticisms are most useful in any remedial or progressive action.

HALF CENTURY OF VETERINARY MEDICINE IN CORNELL UNIVERSITY

By James Law

The subject of this short history of veterinary medicine at Cornell is the story of my chosen life's work, and I may be pardoned perhaps for treating the earlier part at least as a personal reminiscence. My first thought in connection with Cornell carries me back in memory to my earliest meeting with President White, in London. The call to do pioneer work, "the new institution, in the new country, and under new conditions," I welcomed as an opportunity that the Old World could not offer. The inspiration of our first president was contagious and from the time when I met and breakfasted with him in London, he proved ever a true and constant friend to me and my department; he never lost hope of its developing into a Veterinary College that would stand honorably beside similar colleges of the Old World, and he repeatedly brought forward proposals for appropriations for its advancement. I am one of the great multitude who owe a deep debt of gratitude to our well-beloved president, whose work among us is now over, but whose shining memory will be an inspiration to countless generations yet unborn.

Veterinary medicine in Cornell University naturally divides itself into two stages: 1st, the simple *chair* in which for the first time in an American University it was accorded a rank on a par with other sciences, and 2d, the *New York State Veterinary College*, in which the growing field was, by the appointment of different expert teachers in the separate subjects, given a status comparable to the cognate subject of the medicine of man.

When Cornell was opened, October 7, 1868, the chair of veterinary medicine found its first home in the centre of Morrill Hall. one stair up, with a second room in the basement for museum and pharmacy. Our clinical building was furnished by the Campus grass walled in by the great dome of God's blue sky, and watered and disinfected by the life-giving rays of the sun, and the ozone from hill and dale, lake and forest. We had the common privileges that many a veterinarian has to avail himself of in his daily rural practice. Beyond this clinical instruction under such very unacademic conditions, the work of the first year was mainly confined to courses of lectures on anatomy, physiology and hygiene, dietetics, breeding, veterinary medicine, and surgery. In the second year ('69 to '70) at the urgent request of several students, availing myself of every help that could be secured from the departments of my colleagues, in the enthusiasm of youth, I took for a few years upon my shoulders all the specialties of the purely veterinary subjects, and a fairly complete course in veterinary medicine was offered. Of students pursuing these special courses, four secured the Cornell degree, B.V.S., and three continued in the profession, doing most distinguished work therein. Dr. D. E. Salmon organized the Bureau of Animal Industry and for many years served as its head; Dr. A. M. Farrington became Director of the U. S. Meat Inspection Service; Dr. F. L. Kilborne, in connection with Dr. Theobald Smith (another Cornell graduate), demonstrated that the Southern Cattle Tick (*Margaropus annulatus*), was the carrier from beast to beast of the microbian cause (*Piroplasma bigeminum*) of the Texas cattle fever,—thus laying the foundation of the later discovery that

one mosquito (*Anopheles*) carries the microbe of malaria, a second (*Stegomyia*) that of yellow fever, and a third (*Culex*) the blood-parasite (*filaria*), etc. These first veterinary students entered on the general university entrance requirements and took a full four-year course. There was no short cut for them. But in order to live a college must have more than the enthusiasm and hope of one teacher, a full stock of good intentions, and a visible lack of material equipment, and so yielding to the inevitable the department became again a simple Chair of Veterinary Medicine—biding its time. Twice money was appropriated by the trustees to house the department, but no move was made to make use of this, since the sum necessarily came so far short of the most conservative requirements of the hoped-for college.

Meanwhile, the veterinary department moved into the wooden building where Goldwin Smith Hall now stands, sharing it with Chemistry and Physics, and thence later into McGraw Hall, where it remained until the New York State Veterinary College was built.

During these 28 years of "laborious waiting" the stock owners and general public were learning the value and great need for veterinarians who should be men of science, trained in high educational standards, and beyond this the enormous value, monetary and sanitary, of the work done by the trained veterinarian in eradicating infectious animal plagues. The extension of educational work of these early days was done by free use of pen and ink, not as today by well-manned and well equipped demonstration cars following the railroad from village to village. The strongest appeal to stock owners and public came, however, through the work of the commissioners appointed to deal with infectious diseases.

In earlier days I had responded to successive calls to outside work made by this and other states, by the U. S. Government, or by large stock companies. In 1868 I was called to see and pass upon Texas fever cattle shipped to New York and New Jersey stockyards; then received the office of State Veterinarian, then that of veterinarian to the State Agricultural Society, with the special duties of inspection of live stock on exhibition; veterinarian to the Centennial Live Stock Fair at Philadelphia in 1876 with live stock on exhibition from all parts of the world; chairman of the U. S. Treasury Cattle Commission with the duty of preventing the importation of all imported live stock, apart from given ports, where quarantine buildings and yards had to be provided at the docks or where that was impossible, then the provision to carry imported stock in railroad cars on special trains with exhaustive precaution against infection escaping in transit, or after they were deposited in yards and buildings. Other duties were in the line of inspection where a rapidly spreading disease had broken out and threatened a general pestilence. In this way a sharp lookout on communicable diseases was kept up from the Gulf to the Canadian frontier, and from Arizona to Maine. In 1884 the U. S. Commissioner of Agriculture sent me as his delegate to Europe, to the world Veterinary Congress meeting at Brussels, and incidentally to report on the Continental Veterinary Schools. Among other investigations may be named an exaggerated skin disease in man caused by the use in man of smallpox virus which had been first passed through the cow and then used as vaccine (cowpox) in the human being: *Foot and Mouth Disease* imported as cowpox from abroad, but really a combination of *vaccine* and *Foot and Mouth Disease* which conveyed the latter to the cow and started the two worst outbreaks of *Aphthous Fever* that America has seen, begin-

ning respectively in Massachusetts and Michigan, etc. On a number of different occasions Foot and Mouth Disease was reported but turned out to be an altogether different affection. In New York, Illinois, Missouri and Kansas, it was *true ergotism* caused by eating *ergot* from various gramineae, which in different cases cause necrotic sores of the mouth, nose and throat, the ear and other terminal parts of the body. In the limbs the member may die and drop off up to the top of the hoof, the fetlock or even the knee, but the destructive process is arrested when a fresh, sound watery food is supplied. A second form of ergotism is *abortion* and the loss of the entire year's crops of calves or other young. A third form affects the nervous centres, with dullness, stupor, delirium, spasms and other nervous disorders. Inoculation from the sores does not produce Foot and Mouth Disease, in any animal. The mistake in diagnosis implied the quarantine of several states from which these cattle had come, and the cessation of trade in live stock from such states. The losses to the stockmen in these quarantined states may well be imagined. And the grave was usually already dug in which these animals were to be immured, and "the closed grave tells no tales." A similar blunder was made in animals that had fed on gramineae containing other fungi and which caused in the mouth superficial sores having dead scales or even thin scabs around their edges. These were called recovered, or recovering cases of Foot-and-Mouth Disease to be killed because of the disease germs still said to be retained in their dead scales. They could be traced back to no centre of infection where the stock had come from, and inoculation from the sores and scales produced no *aphthous fever*. Errors like this have a doubly injurious effect. They lead first without the remotest shadow of a just ground to the arrest of a safe and righteous trade from the suspected but really sound state, robbing the farmer there of just reward for his year's labor; second they lose to the state, where the suspected stock now are, the food that the stockowner there is entitled to feed them, and make him lose the expected profit on this stock and the meats that under a better management would have supplied at a cheaper rate the needs of his fellows in his own state. A third source of loss is unbalancing of prices and the introduction of large losses so far as this unbalancing extends. In condemning the suspected animals to death the inspectors committed a most grievous mistake. Foot and Mouth Disease is not a fatal, nor a seriously reducing disease, and if uncomplicated is neither long continued in the animal attacked nor liable to leave its germs long active and potent in its system. It is usually over in two, always in three, weeks and the victim is left with little or no reduction in value. In no simple and uncomplicated case should the victim be killed, and above all is this true in a time of threatened famine like the present. In winter when flies and vermin are absent the victim may be shut in the well fenced yard. In summer with vermin abundant, he may be shut indoors with a close well guarded screen to exclude flies and stinging and biting insects. A safe and efficient vermin-killer may be used on the skin if needed. In a week the disease is on the road to recovery and in two weeks the animal is virtually well. The same careful disinfection in any case should follow of the animal and all its products, and in a month or more, when calves begin to come, they are perfectly safe. The inspectors never keep the victims alive long enough to learn for themselves. Although at intervals a herd remains hidden and is practically well when discovered, it is set down as a mild case and either killed on general principles, or left as recovered. A very little experience in a country district of

Great Britain would have given a better opportunity to learn the truth. There the infected steers bought in November were well on the way to recovery at the end of a week, this was perfected in a week more and in the third week they were usually laying on two pounds a day of increasing weight on the turnips. The invasion of 1870 of New York and New England told the same story. In the second week the victims were recovering and in the third week they were doing well whether milking or fattening. The inspectors in later outbreaks (1902 and 1908) pronounced the invasion of 1870 a specially mild form of the disease. On the contrary, the cases showed just as much severity as do ordinary uncomplicated cases anywhere. There was the same virulent contagion, rarely one animal escaped, the same period of incubation, the same violence of the disease when at its height, the same large blisters on tongue, roof of the mouth and lips, followed by the same angry red, round abrasions, the same loud smacking of lips and tongue, the same loss of appetite and rise of temperature. By the eighth day all the signs were improved greatly and by the third week the animals were usually well recovered. The subsequent invasions of 1902 and 1908, both apparently introduced by impure vaccine from abroad, spread over Massachusetts and adjacent states in 1902 and Michigan, New York, Pennsylvania, and Maryland in 1908. The striking feature in the last was the entire escape of Ohio though directly in the line of the plague. This was fully explained by the facts that the Ohio farmers found that it would be unprofitable to stock up with feeding cattle, and made few or no purchases; New York and Pennsylvania on the other hand bought from the west including Michigan, the cattle went through by rail and the plague spread in the country around the large Buffalo market, and eastward. Similarly this plague never spread into nor through the Scottish Highlands where outside stock never enter, nor the Isle of Man, the Channel Islands, nor any but two counties in Wales, it never made any progress into the hilly Galloway, Wigton, Westmoreland, nor the Hebrides. The non-movement of cattle inward was the sole protecting cause of their escape. The 62,000,000 head of cattle in the United States through inoculation would have cost a great expense, and in a few months a great many would have reacquired their former susceptibility and, upon reinfection, the power to propagate the disease anew. This explains the constant presence of the plague in the large city dairies. New cows had to be secured at frequent intervals to keep up a constant supply of milk, the immunity acquired by a first attack did not last long, so that the old cows having their susceptibility restored were ready for a new attack and for propagating the infection anew. Again new born calves at spring or other time came susceptible and prompt to contract and transmit the infection. It must be patent that such conditions could not fail to keep the disease active in a large herd.

The same thing is true of tuberculosis and glanders. Both cause lesions (tubercle and degenerated glands) which are largely outside active circulation and thus become permanent culture centres for the microbe. If they do not prove early fatal, both become chronic from this cause, and without a special tuberculin or mallein test, it is impossible to say whether the disease is cured or not. Until the diseased is without glandular change, and with entire insusceptibility to the test, the victim cannot safely mix with other animals of a susceptible race and hence rigid separation, open air life, and wholesome surroundings though valuable, are not to be trusted till every test suggests complete health. I have had the best results in chronic glanders from the use of healthy cow's serum—her race being completely immune to glanders.

I have also dealt with anthrax in grazing cattle, by sterilized serum from the infected. Others have failed with dairy cows. Perhaps the effect of milk and milking on the system robs the serum of its value. So with blackleg. These illustrate how different plagues require different fundamental treatment. The whole great field of parasites demands for each its own special treatment.

In 1879 the New York legislature made an appropriation to stamp out lung plague, but after a year's work, with a successful end well in sight, a change in party rule rendered it impossible to do more. In 1887 the plague, as I had predicted, appeared in the Chicago Stock Yards. The lesson had now been learned. The Federal government supplied the means and Illinois the authority, and in three months I saw the last acute case of the disease destroyed. This was followed by equally vigorous work in the affected Eastern states, all quarantines were raised and the nation pronounced free from lung plague. The pest had prevailed for 49 years, with an uncounted mortality, had led to the closure of British trade in our live beef cattle, and shut out the still more valuable American thoroughbreds from the English market. These experiences doubtless had their part in paving the way for the action of the New York State legislature when in 1894, on the recommendation of Governor Flower, acts were passed establishing at Cornell University the first State Veterinary College in America.

Senator E. C. Stewart of Ithaca introduced and successfully carried through the various bills requisite for the establishing of the college, the appropriation of $150,000 for buildings, other appropriations for maintenance, and the vesting of the administration in Cornell University. In arranging the curriculum, the existing scientific departments, laboratories, and libraries were all made use of, as far as possible, and eight men were appointed to the veterinary faculty proper. The writer was made director of the college and has ever counted himself most fortunate in his association with the seven distinguished men who began with him the work of the new college: Simon H. Gage, Veranus A. Moore, Pierre A. Fish, Walter L. Williams, Grant S. Hopkins, Benjamin F. Kingsbury, and Raymond C. Reed. Though better than the equipment for the pioneer work of the early days of Cornell, the as yet imperfect equipment of the newborn college at times sorely tried the earnestness and devotion of these loyal men.

In the second year of the college, Governor Flower made possible the splendid library that bears his name. This generous gift made available to us the records of the modern scientific world. In 1901 through the representation by Professor Gage of our need of endowment for the library, Mrs. Flower most promptly and generously gave $10,000 as an endowment fund, sufficient to secure for the library year by year and month by month much of the freshest prints of research in the different subjects on which the college is engaged and to constantly inspire its readers with the thought of active contemporary scientific work in all parts of the world. In 1905 to 1906 entrance requirements for the first time demanded four years of successful high school work. This change had been announced two years before, bringing a decided increase of entering students in 1903 and 1904 with an equal decrease in 1905. But the latter, being better prepared and more capable men, rendered possible a fuller and more profitable supervision, especially in laboratories and clinics, the work of which was becoming more and more important.

An extension of the college course from three to four years was still anxiously hoped for, but this was not secured until five years later and even then was only

optional until the academic year 1916–1917, ten years after I had retired (emeritus) and Dr. V. A. Moore had become director of the Veterinary College.

In the matter of buildings the same "watchful waiting" had been the rule. It was only in 1911 that the enlargement of the north wing of the main building was added, and in 1912 the clinical building and hospital followed.

To speak only of the material side and equipment would be to omit the living, vitalizing, and moving heart and spirit. From the hot August day when I first set foot on the shores of the new country, the support of warm-hearted sympathy and interest in its growth has never failed the then new enterprise. Mr. Cornell's strength and confidence, tempered in more intimate relations by a kind fatherly bearing, proved a strong rock for us all to rest upon, while the debt of love and appreciation for our first president, Andrew D. White, can never be fully paid.

To the clear-eyed, far-sighted policy of our present president, Jacob Gould Schurman, we owe the present firm bond between Cornell University and the State of New York, by virtue of which the Veterinary College is a state institution. In veterinary medicine as in other fields he has proved himself a true friend of every movement for the advancement of the science, and for the bringing out of better methods. Ever ready to give courteous and sympathetic attention to widely diversified interests, he inspires esteem and trust, no less than loyalty and enthusiasm, in faculty and student alike.

In our Director, Dr. V. A. Moore, we have a true man of science, himself a student and graduate of Cornell, who to fit himself for dealing with the most recent and progressive advance in medicine, has devoted his life to the intense study of the normal animal body, to bacteriology and protozoölogy in their relation to communicable diseases, their suppression and extinction. Long may he be spared to the college and nation which he has served with such distinguished success.

The work of our college deals preëminently with life, the reason for its being lives, no goal attained will ever mark the finish of that work. The first faculty blazed the way for their successors and they in turn will make progress possible for those who follow them.

DOCTOR JAMES LAW: A BIOGRAPHY

By Simon Henry Gage

EUROPEAN PREPARATION

Let us go back in imagination to the 13th day of February, 1838, and drop in at the crossroads general store and join in the conversation of the hardy pioneers of this country. Suppose that we had asked what they thought of the importance to them and the 17 million other Americans that a boy baby had been born over in Scotland that morning? They would have been sympathetic, for were they not proud of their own sturdy sons and daughters—but probably they would have said: The baby is all right, we must have boy babies to get men, but we cannot see how this one will affect us any. With their ox-teams, herds of cattle, sheep, pigs, and fowls, the streams and lakes teeming with fish, the illimitable forests full of game, and every summer and fall the flocks of wild pigeons miles and miles in length sometimes literally darkening the sun, and the innumerable hosts of buffalo roaming over the western plains, how could they conceive the idea that their children's children might ever lack for meat foods?

This man-child born on the 13th day of February, 1838, in the good city of Edinburgh, was destined, however, to play a larger role in the live stock interests of this new world than any one born in America on that day. But the preparation necessary to enable him to render that service must needs be in Europe, not here, and the first thirty years of life were spent in acquiring the knowledge there obtainable and in getting the actual experience that would enable him to make the most of his larger opportunities.

First were the borough schools with their sound, even severe, instruction. Then came the professional courses in the veterinary college of Edinburgh—1854–1857. That he did his college work well is attested by the fact that on graduation he won the Highland and Agricultural Society's medal for the best general examination, and its medal for the best written examination on the General and Descriptive Anatomy of the Domestic Animals.

But his keen mind desired still broader training, and he sought the help that the great medical school of Edinburgh could give. In 1857–1858 he had the inestimable privilege of taking courses in human anatomy under William Turner, and in the principles and practice of surgery under the father of antiseptic surgery, Joseph Lister. He longed also for the treasures of knowledge to be found in the famous schools on the Continent, and 1862 found him at the first veterinary college ever established, that at Lyons where he had the inspiration of the great master, Chauveau, and later at Alfort, where he came under the influence of Bouley, the Inspector General of the Veterinary Schools of France.

In 1860 he became professor of Veterinary Anatomy and Physiology and Materia Medica at the New Veterinary College of Edinburgh, and its continuation in London as the Albert Veterinary College until 1867. Besides the teaching he practiced his profession in Scotland, in England, and for about one year in Belfast, Ireland. During this period of teaching and practice Great Britain had suffered much from the dreaded plagues of Rinderpest, Contagious Pleuro-Pneumonia, and

Foot and Mouth Disease, thus giving him opportunity to see at first hand epizoötic diseases and to aid in their suppression.

Dr. Law's ancestors belonged to the Lowland Scotch family of Law. His father was an enthusiastic agriculturist, welcoming all improvements. In 1863 Dr. Law was married to Elizabeth Creichton of Kirkcaldy. Four children were born to them, three daughters and one son. The son died at the age of thirty in 1894. Professor Law's house was one of the first to be built upon the campus. The Laws were good neighbors, and there was always a cordial welcome when one entered that campus home.

While engaged in teaching and practice he had written over 90 papers for the periodicals of that time; and with Dr. John Gamgee, the principal of the Veterinary College in which he taught, he had prepared a richly illustrated work on the Anatomy of the Domestic Animals, a work which covered the general anatomy or histology, the skeleton and the joints, and whose pages we look over today with admiration for their clearness, conciseness, and accuracy. Its only defect was that it did not cover the whole field.

Let us now turn to the United States. The 17 million people of 1838 had increased to 37 millions in 1867–1868, and the four-footed live stock from 58 to 85 millions. The country had gone through the throes of civil war, had abolished human slavery, was building transcontinental railroads and had passed from a pioneer to a more or less fixed civilization. The forests and the game were disappearing, and the teeming multitudes of fish in the streams and lakes were becoming smaller and smaller, the wild pigeons no longer flew in mile long flocks, and the innumerable hosts of buffalo were fast disappearing from the plains. The specter of the animal plagues that had devastated Europe might any day appear in America. In 1867–1868, while the expected plague of rinderpest did not appear, another, a mysterious disease—Texas Fever—from which the cattle were dying by multitudes in transit and at the stockyards, did appear. The distribution of army horses after the civil war had also scattered glanders widely throughout the land.

The more foresighted realized that the flocks and herds of domestic animals must be safeguarded or the fast growing multitudes might—as had happened in all thickly populated countries—feel the pinch of hunger for meat foods when the 17 millions of 1838 and the 37 millions of 1868 had grown to the hundred million which seemed a possibility in the lifetime of men then living. Among these foresighted men was Mr. Cornell, who was a large stock owner. Is it a wonder that he was anxious for the establishment of a chair of Veterinary Science in the new university he was helping to found, and that he wanted the best man that could be secured anywhere to be brought to the institution to train young men and to aid the country in meeting the difficulties which confronted the live stock interests?

Perhaps some of those present remember with what pleasure we listened to President White, at the 1908 Veterinary Banquet in honor of Dr. Law, as he recalled for us the historic scene as he was leaving for Europe to secure for the University the best man in English History and the best man in Veterinary Medicine. President White's picture of that scene will never cease to interest Cornell Veterinarians. He said: "As the boat was leaving the slip Mr. Cornell made a trumpet of his hands thus—making a trumpet with his own hands—and shouted: "Bring back that Horse Doctor." But where was this best "horse doctor" to be found? Fortunately there was in America at the time Dr. John Gamgee, who was aiding

the Government in stemming the tide of the Texas Fever plague. Information was asked of him as to the good men of Europe, and in personal interviews with President White and Mr. Cornell he gave the desired information. Through the courtesy of Professor Burr, Librarian of the White Historical Library, I had a chance to examine the priceless documents concerning the early history of the University, and found among them a letter from Dr. Gamgee which I take the liberty of quoting in part, for it throws a brilliant light on two matters of which none who are now left could give information. The conference had taken place the evening before as will be seen later in the letter. He says: "I will send you all the letters I promised by Friday, but wish you to think over one or two points before you leave and therefore write you today (March 18, 1868).

"In the first place it may be as well you should have a statement from me in writing concerning Professor Law's qualifications. He is about thirty-two [thirty] years of age, was educated at the Edinburgh Veterinary College, is a member of the Royal College of Veterinary Surgeons and from 1857 to 1867 was Professor of Veterinary Anatomy and Physiology in the New Veterinary College of London. He has also studied in the University of Edinburgh and at the Veterinary College of Lyons and Alfort in France. His experience in the investigation and treatment of the diseases of the lower animals is very great and his judgment is particularly sound. He is joint author with myself of a work, not yet completed, on the General and Descriptive Anatomy of the Domestic Animals, and I have no hesitation in saying that Professor Law's section of that work is better than anything of the kind ever produced in any language.

"Professor Law has had great experience in writing, preparing reports, and diffusing information amongst farmers. He is a man of the most amiable disposition and the most sterling integrity. All this I state in the full confidence that my opinion will be entertained by yourself when you know Professor Law as well as I do.

"If he is to lecture in September it might be well he should be aware of what is expected of him as soon as convenient, and I shall be most happy to be the medium for communicating to him any proposals you might wish to make."

The other point on which light is given is how we came to have the Auzoux models of human and comparative anatomy.

Dr. Gamgee's letter continues: "I omitted to mention last night that you should purchase when in Paris some of Dr. Auzoux's models of human and comparative anatomy. They are expensive, but very useful for demonstration and very attractive in a museum. I advise you not to fail visiting Dr. Auzoux's establishment. With kind regards to Mr. Cornell, I remain, Dear Sir,

"Very faithfully yours,

"JOHN GAMGEE."

On the same date that he sent the letter giving the qualifications of Dr. Law to President White, Dr. Gamgee wrote to Dr. Law telling him of the position in Veterinary Science at Cornell University, and telling Dr. Law to send testimonials to President White. Dr. Law did this and President White wrote this among other things, in his acknowledgement. The letter is dated at London, June 24, 1868. "The Cornell University, endowed by the government of the United States, the state of New York, and Hon. Ezra Cornell *must* have a strong depart-

ment of Veterinary Surgery in its College of Agriculture. There is at present hardly anything in the way of Scientific Veterinary teaching in America—indeed I may safely say there is *none* and to build up that department is acknowledged among us to be of the first importance. I hope then to hear from you by return mail, if possible, and if a meeting can be arranged I shall be highly gratified, more especially since Mr. Gamgee's words and the testimonials now before me lead me to expect much pleasure in an interview."

This interview took place in London, the last of June, 1868, and this is what President White wrote to Mr. Cornell concerning Dr. Law: "I have secured James Law of Belfast as Professor of Veterinary Medicine and Surgery." "As you know I have looked through the principal agricultural and veterinary colleges of Europe before coming here. I have found several excellent candidates, but find Mr. Law vastly their superior; he has published books and articles which have given him a high reputation on this side of the water, and personally he is everything we could desire.

"His education was received not only here, but at the great Alfort Imperial School in France. His testimonials from leading men in his profession in England, Scotland, Ireland, France and Germany, show him a leader in his profession although still a young man."

Among the testimonials submitted to President White by Dr. Law were those signed by names that are now household words in human and veterinary medicine. For example: William Turner, the great human anatomist of Edinburgh University; Joseph Lister, the father of antiseptic surgery; Chauveau of the first veterinary college ever established, viz., the one at Lyons, founded in 1761–1762; and Bouley of Alfort, the Inspector General of the veterinary schools of France.

Thus the die was cast, and Dr. Law with his family sailed for America, from Glasgow, August 7, 1868.

DR. LAW'S AMERICAN CAREER

The official notice sent to Dr. Law of his appointment was written by President White himself. It says: "Dear Sir, I take great pleasure in informing you that the Trustees of Cornell University at their recent meeting, elected you to the Professorship of Veterinary Medicine and Surgery. I trust that we may soon see you here as there is much to be done in organization and preparation before the beginning of active instruction, which occurs on the last Wednesday in September."

Dr. Law was on hand, as has always been his wont, and his course in the Anatomy and Physiology of the Domestic Animals began with the opening of the University and continued practically uninterrupted until 1895–1896, when he became the Professor of Veterinary Medicine, Principles and Practice, Zymotic Diseases and State Medicine, and the Director of our New York State Veterinary College. He held this position until his retirement at seventy years of age in 1908.

From the portals of these stately buildings his early facilities seem pitiable enough; but if the equipment and material surroundings were meagre, there was a brave spirit at work therein, and from personal experience and from the testimony of many college friends who have since made their mark in agriculture, in human or in veterinary medicine, or in biological teaching, we recognized the master, and found in those lectures and demonstrations in the anatomy of the domestic animals with a good sprinkling of human anatomy to show intimate relations and homolo-

gies of the various parts and organs, what we were seeking for, some real knowledge of anatomy that would help us in our later studies, and in considering independently the broad questions of evolution which was then confronting every young naturalist, and indeed every one. Our admiration came for him as a teacher from his intimate knowledge of the subjects he dealt with and their relations to the rest of the animal world, and from the perfect clearness of his exposition, and the pains he always took to show us the actual things he was discussing. He gave us a standard of accurate knowledge and clear exposition that some of us are still trying to come up to in our teaching.

An account of a college teacher is never complete without some reference to his attitude toward the students. One may have all knowledge of a subject taught, clearness of exposition and tireless effort in demonstration and still not be a great teacher if there is lacking the saving grace, the human, welding quality of sympathy. The writer of this has good cause to remember the friendliness of Dr. Law outside as well as inside the class-room. It is hard—nay impossible—for this generation to realize the conditions under which we worked during the first decade of the university. Nowadays microscopes are as common in a laboratory as horseshoes around a blacksmith shop, and books and periodicals are stacked in hopelessly large piles. It was not so then. In 1873–1874 there was one microscope belonging to the university and that was given by our non-resident lecturer in Agriculture—John Stanton Gould—to Professor J. H. Comstock for his just-starting department of Entomology. The three others in the university were the personal property of the heads of departments: one for botany, one for zoology, and one that was presented to Dr. Law as a mark of esteem by his class in Edinburgh in 1862. I well remember with what interest—almost veneration—we looked into this marvelous instrument that could make things, invisible to the naked eye, appear so large and clearly defined. Later he let me use this microscope, and when I was sorely in need of books or periodicals, he lent them to me from his private library.

Perhaps a word may not be out of place concerning Dr. Law as a member of the community, university and civic. He became an American citizen, and if there was a movement on foot to improve the health—physical or moral—of the university and the community Dr. Law could always be counted upon. He was ready to contribute skill, time, and money as well as sympathy. His was a familiar figure in the university chapel and at the non-resident lectures, and indeed wherever the higher intellectual or spiritual life was under consideration.

It was the hope of President White and Mr. Cornell that out of this department of veterinary medicine there might develop a veterinary college. But the mill of the gods grinds slow. In season, and some thought out of season also, Dr. Law pleaded for and advocated a preliminary and professional training for veterinarians that would render them the peers of the medical profession; and he pointed out with a cogency that none could gainsay that not less training than the students of human medicine, but rather more should be required, for the human physician has but one genus of animal to deal with while the veterinarian is confronted with the ills that more than twenty genera of animals are subject to.

In 1883 he was sent by the United States Department of Agriculture as the American representative to the International Veterinary Congress held at Brussels, Belgium, and to report upon the Veterinary Colleges of Europe. Dr. Law gives

an account of that Congress and of the veterinary colleges in the first annual report of the Bureau of Animal Industry for the year 1884, pp. 321–350. As one studies this lucid report, it is with a feeling of depression that one compares the standards of our veterinary education with that of Europe as determined by that congress and the one held at Zurich, Switzerland, in 1867. Of the 33 veterinary institutions on the Continent, all supported by the respective governments, the course of study in 1883 was nowhere less than three years, and in seven of the countries it was four years.

Is it a wonder that upon his return to America he should make renewed efforts to improve the educational facilities in his department and in his entire adopted country?

In preparation for this biography, the Comptroller of the University, Mr. E. L. Williams, showed me the report upon the veterinary department that was made in 1885 by a committee consisting of Trustee Humphrey and Dr. Law, and written in Dr. Law's hand. It is a plea for help and better facilities. Up to that time Dr. Law had given all the instruction in veterinary science—anatomy, physiology, materia medica, therapeutics, pathology, surgery, everything for the four men who had received a veterinary degree, and to the numerous men who had entered human medicine or had become teachers in zoology and in agricultural colleges, or had become agriculturists.

In this report he pleads for the establishment of at least one more chair, and better, two additional chairs, and for suitable buildings. The Executive Committee of the Trustees of the University voted an appropriation of $10,000 for a building, but the amount was so inadequate and the difficulty of determining a location for it so great that Dr. Law allowed it to lapse. But he kept on with his courses year by year in his small inadequate quarters, until 1896. Through all these discouraging years of waiting he never lost courage, however, and his activity in behalf of the live-stock interests of the country never abated. He wrote many articles for periodicals; prepared a book, "The Farmer's Veterinary Adviser," which is now in its 16th edition; prepared a five volume work on Veterinary Medicine for practitioners, which is now in its third edition. Moreover, he always stood ready, and was often called to aid the state and the nation whenever animal plagues threatened the land.

It is a familiar saying that it is the darkest just before day, and it proved so in this case. In January, 1893, Dr. Law gave a notable address before the State Agricultural Society at Albany. His subject was "Importance of a Higher Veterinary Education."

On the 36 octavo pages of this address Dr. Law marshalls in a most striking and convincing fashion the reasons why a higher veterinary education should be required for the safety of the human race from animal diseases and the saving of animals for human food. In preceding paragraphs mention has been made of Dr. Law's friendliness to everybody; but in this address the friendliness goes out to the animals that he had been trying to benefit all his life and he speaks with a kind of holy anger of the wrongs done them by the ignorant veterinarians. Following a discussion of the kind of men at that time serving as meat and milk inspectors in cities he says: "Such appointments but voice the general ignorance on this great subject. Another manifestation of the same ignorance was the passage by the legislature of 1887 of an act authorizing anyone who will testify that he has pre-

scribed for animals for three years previous, to register in the county clerk's office as a *veterinary surgeon*. This was aggravated by the passage of three successive acts in the three following sessions, authorizing candidates for this degree to still enter the profession on the same terms. . As a sample of the result of this legislation it may be stated that in the county of Tompkins sixteen men registered as *veterinary surgeons* each and all utterly wanting in that education and training which goes to make the comparative physician. No one of them had been to college, nor had practically studied the structure and functions of the different domestic animals; chemistry, materia medica, and pharmacy were to them a closed book. Their combinations of drugs were as likely to develop poisonous chemical compounds as not, they confounded one disease with another, and blundered along with nostrums and placebos no matter what, so that they might draw their fees for attendance, in short they were licensed to poison, maim, and slay the flocks and herds of the Empire State, and heartily did they avail themselves of their opportunity."

The next year, 1894, as is detailed by others in these proceedings, Governor Roswell P. Flower turned the tide in his statesman-like message to the legislature on agricultural education and the wisdom of utilizing the agencies at Cornell University for teaching and investigating the problems relating to the animal industry of the state; and in that and in the following year adequate appropriations were made to establish and conduct this veterinary college.

At last the educational ideal which Dr. Law had hoped for and worked for and waited for became realized, but other compensations were not so slow in coming to him. He had the grateful appreciation of the state and the nation for his help in controlling animal diseases. He saw one of the early quartet of his graduates, Dr. Salmon, become the creator of a bureau of animal industry for the entire country and its chief for many years; and another, Dr. Farrington, became assistant chief. The mysterious, and dreaded Texas fever had persisted. One of his graduates, Dr. Salmon, determined the boundary of the permanently infected area, another, Dr. Kilborne, helped effectively in showing the vital connection of the cattle tick and the disease, and one of his pupils, Dr. Theobald Smith, showed that Piroplasma bigeminum was the real etiological factor in the disease, and established beyond question the transmission of a living contagion by means of insects. Another of his pupils, Dr. V. A. Moore, aided in carrying on the exacting and laborious bacteriological examinations necessary to eliminate the bacteriological origin of the disease; and still another, Dr. Cooper Curtice, with a sagacity which seemed only wild fancy at the time, suggested that as the cause was now known, the real way to deal with the disease was to rid the southern cattle of the ticks and thus dry up the source of infection; and he has since taken an important part in bringing his far-sighted suggestion to realization. Still other of Dr. Law's pupils have helped to make this college what it is.

As a final word: With the perspective of fifty years to judge by, what has been the outcome of human effort in this case? The spirit in which the work was undertaken can be given in Dr. Law's own words quoted from the closing paragraph of a letter to President White and written at Belfast, Ireland, June 23, 1868, almost exactly 51 years ago today.

It is modest, yet breathes the confidence of a brave heart that has done its utmost in preparation. Here is what he says:

"It is needless, I hope, to assure you that in the event of my having the honor to be appointed to the Cornell chair it will ever be my endeavor to prove myself equal to the responsibilities of the position by devoting my whole energies to the advancement of Veterinary Science."

The success of his tireless efforts for the "advancement of Veterinary Science" is attested not only by these noble material things which are now before us, but by the subtler, yet eternal, things that come with the awakening of the human spirit in the development of a new country.

His face has always been turned toward the light. In spoken words and in his writings, so sane, progressive, and helpful, he has given heart to the individual worker, and to institutions in more backward communities, to inaugurate improvements in theory and practice.

President White in his autobiography, Vol. I, p. 369, thus expresses it: "And with especial gratitude should be named Dr. James Law . . . whom I called to our veterinary professorship. Never was there a more happy selection. From that day to this, thirty-six years, he has been a tower of strength to the university, and has rendered incalculable services to the State and Nation. His quiet, thorough work impressed everyone most favorably. The rudest of the surrounding farmers learned more and more to regard him with respect and admiration, and the State has recently recognized his services by establishing in connection with Cornell University a State Veterinary College under his control."

And President Schurman, on the retirement of Dr. Law, at seventy, says this in his report of 1907–1908: "Dr. Law came to Cornell University at its opening in 1868 and has given it 40 years of continuous service, and that service has been of extraordinary value and of wide fruitfulness both within and without the University. Dr. Law has trained many of the leaders in veterinary science, he has helped to raise the rank and estimation of the veterinary profession, he has elevated the standards of veterinary education in New York and elsewhere, he has contributed by his investigations to the advancement of the science of veterinary medicine, and as a veterinary practitioner he has aided the Government in stamping out contagions that threatened vast injury to the live-stock interests of the country. At Cornell University he has built up a College of Veterinary Medicine, which, thanks to the wise generosity of the State of New York, it has been possible to make the pride of the profession in this and other states." In his acceptance of the portrait of Dr. Law given by the Alumni to the college, President Schurman, in the closing sentence, gives expression to the human side thus: "And above all, his qualities as a man have won not only our regard and esteem, but our deep and lasting affection."

And, last of all but we hope not least in Dr. Law's estimation, we, the faculty and alumni, wish on this Jubilee occasion to offer the heart-felt tribute of regard and admiration to our teacher, friend, colleague, and leader, the real Founder of this great Veterinary College.

THE ESTABLISHMENT AND GROWTH OF THE NEW YORK STATE VETERINARY COLLEGE

By Grant S. Hopkins

Any approximately correct appreciation of the significance of the New York State Veterinary College and its influence on the development of veterinary medicine in this State, necessitates some knowledge of the educational requirements for admission to the practice of veterinary medicine at the time the college was founded. It does not necessarily follow that the college has been the only factor in the remarkable vitalizing processes of the past quarter century. Nevertheless, it is significant that the great advances in the educational and professional status of the veterinarian coincide with the period since the Veterinary College was established in 1894.

For some years prior to this date, i. e. since 1886, the only legal requirements for practice in this State were as follows: (a) either graduation from an incorporated college or university or a certificate of qualification from a legally incorporated veterinary society or (b) not less than three years of practice of veterinary medicine prior to the year 1886. With these slight restrictions anyone who so desired was entitled to practice veterinary medicine, with the inevitable result that many wholly incompetent and too often disreputable persons took up the practice. With the opening of the State Veterinary College in 1896, the halcyon days of easy access to the practice of veterinary medicine were abruptly terminated. In 1897 the State Legislature passed an act fixing a minimum requirement for all practitioners, exclusive of those already in practice or registered in an approved veterinary school. Thereafter, all candidates for admission to practice in this State were required to satisfy the threefold requirements of the newly established practice act, namely: (1) Satisfactory completion of two years of high school work for students entering in 1896 and four years of high school work thereafter; (2) the study of veterinary medicine for a period of not less than three full years; and (3) the state licensing examinations which must also include evidence, satisfactory to the State Department of Education, that the candidate is of good moral character and has met all the prescribed preliminary professional requirements.

It may be of interest to note the legal requirements for practice in other States of the Union. According to Handbook No. 12 of the University of the State of New York (entitled Higher Education, Veterinary Medicine and Surgery, 1918) there are four distinct lines of statutory requirements as follows: (1) preliminary education; (2) professional training; (3) licensing tests; and (4) registry. Of all the States in the Union, only seven have statutory requirements regarding preliminary education. These States and their preliminary requirements are as follows: Delaware, common school education; Indiana, common school education; New Jersey, common school education; New York, graduation from a four-year secondary school course subsequent to eight years of elementary preparation; Pennsylvania, at least 15 standard high school units or their equivalent; Vermont, prescribed by the board; West Virginia, prescribed by the board.

In regard to professional training, there are no legal requirements in twenty-four of the States. In the remaining twenty-four States, the required professional

training varies greatly. Thirteen of these States require a diploma from a veterinary school having at least a three-year course; one State requires graduation from a veterinary school having at least a two-year course of six months each; and in one State the professional requirements are prescribed by the State board of veterinary medical examiners. In reference to the licensing tests, thirty-six States require an examination; six require either an examination or a diploma from a reputable veterinary school; one State leaves the matter to the discretion of the board; and five States have no requirements whatsoever.

In this brief account of the establishment and growth of the Veterinary College, it seems pertinent to recall the specific objects for which the college was founded and has been generously supported by the State. In the act of the Legislature which provides for the administration of the college, the objects are stated as follows:

"To control investigations as to the nature, prevention, and cure of all diseases of animals, including such as are communicable to man and such as cause epizoötics among live stock; to investigate the economical questions which will contribute to the more profitable breeding, rearing, and utilization of animals; to produce reliable standard preparations of toxins, antitoxins, and other productions to be used in the diagnosis, prevention, and cure of diseases, and in the conducting of sanitary work by approved modern methods; and to give instruction in the normal structure and function of the animal body, in the pathology, prevention, and treatment of animal diseases, and in all matters pertaining to sanitary science as applied to live stock and correlatively to the human family."

For the realization of this comprehensive and formidable undertaking, the work of the college was organized under six departments as follows:

1. Anatomy and anatomical methods.
2. Physiology, materia medica and pharmacy.
3. Microscopy, histology and embryology.
4. Veterinary medicine and sanitary science.
5. Veterinary surgery and obstetrics.
6. Pathology, bacteriology, and meat inspection.

The subjects of chemistry and animal husbandry were taught in other colleges of the University.

The original faculty of the Veterinary College consisted of four professors, two assistant professors, one instructor and one assistant.

The buildings comprising the college at its opening were as follows: The main central building, since named James Law Hall; the general patients' ward or hospital; the operating room, now used for autopsies; the groom's cottage; the small isolation ward; and the mortuary building.

Beginning with this very modest material equipment and environed by an indifferent general public, the small but enthusiastic faculty began its work. Outside of official recognition and support, the first evidences of appreciation and of far-sighted vision were the founding and endowment of a library for the special use of the Veterinary College. It is impossible to estimate the far-reaching influence on the progress of veterinary education of these most timely gifts. In 1897, Ex-Governor Roswell P. Flower gave to Cornell University $5,000 to found a library especially adapted to the needs of the faculty and students of the New York State Veterinary College. Four years later, Mrs. Roswell P. Flower gave $10,000

as an endowment to this library, the income from which is to be used for the purchase of books and periodicals, thus perpetually keeping the library abreast of the advances in all that pertains to comparative medicine. Of the numerous smaller gifts to the library that have been made from time to time, two may be specially mentioned. One of these is a collection of about 150 volumes that was given in 1901 by Dr. W. L. Zuill of Philadelphia. The second is a collection of 500 volumes presented in 1918 by Dr. David E. Buckingham, Dean of the College of Veterinary Medicine of the George Washington University, Washington, D. C. The latter collection was formerly the library of the late Dr. Daniel E. Salmon, who graduated from Cornell University in 1872. Four years later he received from Cornell the degree of Doctor of Veterinary Medicine. Dr. Salmon organized the Federal Bureau of Animal Industry and served for many years as Chief of the Bureau.

Among other benefactions of private individuals to the Veterinary College are the following: At the opening of the University in 1869, Mr. Horace K. White of Syracuse endowed two prizes of $15 and $10 respectively to be awarded annually to the most meritorious students in veterinary science. In June, 1914, a graduate scholarship of $200 annually was established by Cornell University. In 1913, Mr. James Gordon Bennett of New York City founded an annual prize of $50; this, like the two preceding, is permanently endowed. In 1911, Dr. W. G. Hollingworth of Utica, N. Y., established an honorarium of $50 annually. In 1913, Dr. Frank H. Miller of New York City established an annual prize of $50. In 1909, the alumni of the Veterinary College presented an oil painting of Dr. Law, the first Director of the College.

The early years of the Veterinary College, like those of many other pioneer enterprises, were years of anxious endeavor in the adjustment to unfavorable surroundings and opposition. The principal causes of opposition were the unprecedented and radical increase in the preliminary requirements for admission to the college and the length of the college course itself. The time and efforts necessarily expended in the maintenance of these higher requirements seem, in retrospect, a pitiable commentary on the educational status of the veterinary profession and of its ideals at that time. Most happily, however, such opposition has now nearly disappeared in the State.

In this attempt to give some idea of the development of the Veterinary College, strict adherence to chronological order is unnecessary. It should be kept in mind also that in the development of an institution, as in that of an organism, certain intangible influences may be of as great importance as the more obvious ones that can be seen and measured. The lines of development along which the more obvious results are discernible are those of (1) material growth, (2) additions to the faculty, (3) new or improved facilities for teaching and studying, (4) investigations and research, (5) publications, (6) vastly improved personnel in the veterinary profession of the State.

1. *Material Development.* The original plant as it existed at the opening of the college has been mentioned. The first considerable addition to the material equipment of the college was made in 1908 when Cornell University purchased and turned over to the college an experimental farm of 100 acres. The use for which this farm has served will be mentioned later.

In 1909, the State Legislature appropriated $20,000 for the addition of a second story to the anatomy laboratory. An additional appropriation of $3,000 for equipment was made in 1911. This addition doubled the space available for the anatomy department and also provided the college with its largest lecture room or auditorium. Time has abundantly demonstrated that without these enlarged laboratories and auditorium it would have been utterly impossible to accommodate the students in anatomy and the numerous gatherings for public lectures, etc., in connection with the work of the college.

The need of additional facilities for the department of medicine and for clinical instruction had meantime become so obviously imperative that in 1911–12 the State Legislature made an appropriation of $140,000 for a series of three buildings adapted to the needs of these departments. Subsequent appropriations to the amount of $19,000 were made for their equipment. Two of these buildings are used as hospitals for large and small animals respectively and for clinic halls for teaching veterinary medicine. The third building of the group is used as a farriery.

In 1913–14, $2500 was expended at the Veterinary Experiment Station on the experimental farm for necessary equipment for the production of serum.

In 1916, an appropriation of $15,000 was made for buildings, equipment, and maintenance for the special investigation of the diseases of breeding cattle.

In the present year, 1919, the State Legislature authorized the expenditure of $100,000 for a much needed addition to the James Law Hall. Of this sum, $30,000 is available for use this year.

2. *Numerical Growth of the Faculty.* At the opening of the college, the faculty consisted of four professors, two assistant professors, one instructor and one assistant. Five years later, the personnel of the original faculty had changed somewhat. One professor and one instructor had been transferred to another college of the University and the assistant had been promoted to an instructorship. Two assistants were appointed for the year 1901. At the close of the next five-year period, 1905–06, only minor changes in the faculty had occurred. Four additional assistants were appointed for the year 1905–06. During the next five-year period, 1906–11, important changes in the faculty occurred. The most important of these were the retirement in 1908 of the first Director, Professor Law, and the appointment of Professor Moore as his successor to the Directorship. The other changes during this five-year period were the appointment of a successor to Dr. Law in the chair of veterinary medicine; and the appointment of two assistant professors in comparative pathology, materia medica and therapeutics, respectively. There were also six instructors and three assistants. At the close of the 20th year of the college, 1915–16, the faculty consisted of seven professors, seven assistant professors, one superintendent of the veterinary experiment station, four instructors and two assistants. In 1918–19, there were seven professors, six assistant professors, one superintendent of the veterinary experiment station, seven instructors, and one assistant.

3. *Growth of Educational Facilities of the Veterinary College.* The most noteworthy of these may be summarized as follows: In 1909–10, the subjects of materia medica and therapeutics together with the clinic for small animals, which up to this time formed a part of the department of physiology, were organized into a separate department. The department of physiology thereby was enabled to

devote its undivided attention to instruction and research in physiology. The new department, with ample hospital facilities and equipment, devoted all of its efforts to materia medica and therapeutics, the diseases of small animals and the clinic for the same. In the year 1914–15, two important steps in advance were taken by the college. One of these was the extension of the course of instruction to four years and the other was the addition of a new department of obstetrics and research in the diseases of breeding cattle. Up to this time obstetrics and surgery were included in the one department of surgery and obstetrics. This new department was organized primarily for the purpose of investigating the diseases of the reproductive organs of breeding cattle and the prenatal and postnatal infections of the newborn calves. Whether these are new diseases or more pronounced manifestations of already recognized ones matters little. The nature and methods of control of this group of diseases are so imperfectly understood and the losses to cattle breeders and dairymen resulting therefrom are so serious that a thorough investigation of them is most desirable and opportune. A herd of about thirty breeding cattle is kept for these investigations. Outside herds in different parts of the state also are utilized in these studies as opportunities offer. The unique opportunities of the students for instruction and study in these important lines of veterinary medicine are obvious.

In the departments of medicine and surgery, notable advances have been made in developing and perfecting the educational possibilities of the clinic, particularly in the development of more systematic instruction in physical diagnosis, the development and fuller utilization of the ambulatory clinic, the systematic utilization of the exceptional opportunities offered by the veterinary experiment station and the department of obstetrics and research in diseases of breeding cattle. The establishment of a separate clinic for small animals already mentioned has proven very advantageous. An important adjunct to the clinical facilities of the college since 1913–14 is the department of horseshoeing. The students not only take one or more practical courses in horseshoeing but have opportunity of observing the various methods of preparing the hoof for shoeing and the selection of proper shoes under the varying conditions of lameness, disease or deformity of the hoof by a thoroughly expert farrier. The uses subserved by the veterinary experiment station are numerous and important. It affords a place for keeping experimental animals under proper conditions of living and for carrying on experimental work on the larger animals. At the present time, the principal work that is being done at the station is an extended investigation on the nature and control of hog cholera and the production of anti-hog-cholera serum. For this latter purpose, a herd of from 75 to 100 hogs is constantly maintained. During the present year about one-half million cubic centimeters of anti-hog-cholera serum have been produced here and distributed to practitioners for use in the State. Exceptional opportunities are thus offered the students of the college for familiarizing themselves with the method of producing serum as well as of studying the various phenomena of this widespread and important disease.

In addition to the educational facilities mentioned above, and second to none in importance, are the libraries. Access to the literature on a given subject is indispensable in any investigation or research.

The Flower library of the Veterinary College consists of 5933 volumes and 105 current scientific periodicals, specially relating to comparative medicine. This

highly specialized library is supplemented by the general University library, which consists of nearly 500,000 volumes, and 2000 current periodicals of which about 450 pertain to the various sciences. In these libraries may be found most of the available literature on nearly every phase of veterinary or comparative medicine.

4. *Investigations.* One of the most important as well as one of the most fruitful objects of the Veterinary College is the carrying on of investigations and research. These activities have extended over a wide range of subjects and in their aggregate form an impressive and gratifying exhibit. In this brief sketch, however, it is impracticable to do more than mention a few of the more important of these investigations. In the department of surgery six outstanding achievements of wide if not of general acceptance may be cited, viz., (1) the development of one of the best operating tables for large animals, (2) a new method of operating for the relief of hemiplegia laryngis (roaring), (3) operative method of treatment of poll evil and fistulous withers, (4) operative method of treatment of intussusception of the intestine, (5) new treatment of open joints, (6) treatment of mastitis by formalin. The more important investigations of the department of pathology and bacteriology are as follows: avian tuberculosis; application of the Bang method for the control of tuberculosis; the elimination of tubercle bacteria from tuberculin reacting cattle; the limitations of tuberculin in diagnosis; the examination of the blood of horses as a means of detecting certain important internal parasites; infectious anemia in horses and methods of diagnosis; specific reactions for the diagnosis of glanders; verification of the agglutination test for the diagnosis of glanders and the introduction of that method of diagnosis; etiology of infectious abortion in cattle; the bacterial flora of the udder of dairy cattle; etiology, nature and control of bacillary white diarrhea of chickens; cause of poisoning of garbage-fed hogs; structural changes in certain non-specific infections of the joints. In the department of medicine may be cited the following: cerebro-spinal meningitis of horses, and methods for the practical application of the sputum cup in the diagnosis of open cases of tuberculosis in cattle. In the anatomy department: investigations on the topographic anatomy of the viscera of the dairy cow; location of the lymph glands of cattle. Department of physiology: economic and dietetic importance and wholesomeness of bob veal; urine analysis of the hrose. In the department of obstetrics and research on the diseases of breeding cattle, investigations are in active progress but not completed, on a closely related group of diseases of cattle, viz., the causes, nature and prevention of sterility, abortion, retained placenta of breeding cattle and scours and pneumonia of newborn calves. Veterinary experiment station: the control and prevention of hog cholera. Department of materia medica and small animal clinic: local and general anaesthesia in veterinary practice.

5. *Publications.* The publications from the Veterinary College form too extensive a list to be enumerated here. They deal with a wide variety of subjects in veterinary medicine and include some standard text and reference books. Of the hundreds of separate papers and reports that have been published, only those that have appeared as text books will be mentioned.

In the department of Medicine, the following books have been published:

Veterinary medicine, vols. I–V (9½x6½), pp. 2,794; second edition, pp. 3, 111; third edition, vols. I–IV.

Veterinarian's handbook on materia medica and therapeutics, (7 x 5), pp. 178.

Allgemeine chirurgie, Eugene Fröhner. A translation.

In pathology and bacteriology:

Laboratory guide for students in bacteriology (7¼x 5), fourth edition, pp. 154.

The pathology and differential diagnosis of infectious diseases of animals (9½ x 6½), fourth edition, pp. 578.

The principles of microbiology (9½ x 6½), pp. 506.

Bovine tuberculosis (9¼ x 6½), pp. 195.

Health herd book (13 x 10).

The clinical pathology of the blood of domesticated animals (9 x 6), pp. 166. This has passed through two editions.

In the department of obstetrics and research:

A course in surgical operations for veterinary students (7¾ x 5), pp. 84. A translation.

Surgical and obstetrical operations for veterinary students <embodying portions of the above> (8 x 5½), pp. 204. Three editions.

Veterinary obstetrics and the diseases of breeding animals and of the newborn (9½ x 6½), pp. 1,127.

Veterinary obstetrics (9½ x 6¼), pp. 637.

In the department of anatomy:

A guide to the dissection of the cranial nerves and blood vessels of the horse (12 x 9), pp. 45.

A guide to the dissection of the vessels and nerves of the pectoral and pelvic limbs of the horse (12 x 9), pp. 54.

The viscera in situ of the dairy cow (12 x 9), pp. 43, including 10 full-page drawings in colors.

In the department of physiology:

Practical exercises in comparative physiology and urine analysis (8 x 5½), pp. 71.

Elementary laboratory guide in materia medica and pharmacy (9¼ x 6¼), pp. 57. Two editions.

Veterinary doses and prescription writing (6 x 4), fifth edition, pp. 173.

Examination of the urine of horse and man (9¼ x 6¼), third edition, pp. 80.

Elementary exercises in physiology, third edition, pp. 120.

In the department of materia medica and the small animal clinic:

A laboratory guide in materia medica and pharmacy (9½ x 6½), pp. 97.

Practical veterinary pharmacology and therapeutics (9¾ x 6½), pp. 519.

6. *Alumni and Students.* The following statistics relative to the alumni and former students of the Veterinary College are in accord with available data.

Of the 769 veterinary students who have been registered in the college, 508 have been graduated, 204 have dropped out or withdrawn, and 57 are still in the college.

In the first table [1] are given the total number of new students for each year in all classes, and of these, the number that were graduated.

In Table II is given the number that were graduated each year, together with other details.

Table III gives the number of veterinary students whose scholastic attainments have received special recognition by election to membership in the honorary scientific society of Sigma Xi. It also shows to what extent the veterinary students have participated in the make-up of the various athletic teams of the University.

In the year 1908–09, a series of sports consisting of football, cross country, basketball, indoor carnival, track, rowing and baseball was inaugurated between the various colleges of the University. Participation in all of these sports is considered in the determination of the final winner of the series. In one of the sports, namely, rowing, the veterinary college has never been represented and in so far, therefore, has always been handicapped in its final standing in the intercollege athletics of the University.

Considering the relatively small number of veterinary students as compared with those in the other colleges of the University, the standing of the college, as indicated above, is very creditable.

The first nine sports mentioned in Table III refer to intercollegiate sports. The numerals represent the number of veterinary students on the respective varsity teams. The last seven sports refer to inter-college or sports between teams of the different colleges of the University and the standing of the veterinary teams in the respective sports.

TABLE I

	New Students of all classes	Number graduated	Eventually dropped or left college	Still in College
1896–97	11	9	2	
1897–98	10	9	1	
1898–99	11	7	4	
1899–1900	18	14	4	
1900–01	22	15	7	
1901–02	26	19	7	
1902–03	28	23	5	
1903–04	41	29	12	
1904–05	47	35	12	
1905–06	19	12	7	
1906–07	31	26	5	
1907–08	33	28	5	
1908–09	35	27	8	
1909–10	39	30	9	
1910–11	44	33	11	
1911–12	39	34	5	
1912–13	50	36	14	
1913–14	46	29	17	
1914–15	49	35	12	2
1915–16	81	55	25	1
1916–17	37	1	14	22
1917–18	19	1	7	11
1918–19	32	0	11	21
Nonresident	1	1		
	769	508	204	57

TABLE II

Year of graduation	No. graduated	Living	Deceased	In N. Y. State			Outside of New York State										Member A.V.M.A.	Member N. Y. S. V. M. S.	In War Service
				Practice	Teaching	Administration, lab work B.A.I., etc.	Practicing	Teaching	B. A. I. Inspection	Dairy Inspection	City and State Work	Laboratory Work	Adminis rative Work	Regular Army	Other Business	Foreign	Unknown			
1896–97	3	3							2	1							1		
1897–98	4	2	2				1							1			1		1
1898–99	6	4	2	1	1	1		1									3	1	1
1899–1900	7	7		1	1	2	1	1						1			4	3	2
1900–01	9	9		2	1		1					2	1		2		8	3	2
1901–02	10	10		3		1		2	1	1				2			6	4	2
1902–03	13	11	2	2	1	3			3			1				1	6	2	
1903–04	16	13	3	4		2	1	1	1			1				1	6	3	3
1904–05	26	26		11		1	3	3	2	1	2			2		1	15	12	4
1905–06	27	25	2	6		5	1	4	6			1	1			1	12	7	
1906–07	32	30	2	13	1	3	4		4			1		1	2	1	10	9	3
1907–08	18	18		4	1	6		1	2			1				3	7	2	1
1908–09	25	23	2	13	1	3	2	1			1					1	7	7	4
1909–10	22	19	3	11		4	1							1	1	1	4	6	4
1910–11	30	28	2	13		3	3	3	3		1	1				1	12	10	8
1911–12	29	27	2	13	1	6	2		3				1			1	7	6	7
1912–13	22	21	1	10	1	4	3	1	2								2	5	9
1913–14	47	46	1	20	2	3	4	2	10			1			1	2	10	6	9
1914–15	32	32		23		1	4		1	1		1			1		5	2	15
1915–16	29	28	1	23			3		2								3	2	17
1916–17	33	33		18	3		3		1					4		4		3	23
1917–18	53	53		38	1	2	5	3	2	1			1						46
1918–19	15	15		12	1							2							5
	508	483	25	241	16	50	42	23	45	5	4	12	4	12	7	11	11	129	93	166

TABLE III

	Crew	Baseball	Football	Track	Intercollegiate	Basketball	Wrestling	Fencing	Cross country	Sigma Xi	Gridiron or soccer	Cross country	Basketball	Indoor carnival	Crew	Track	Baseball	Final standing in series
1896–97																		
1897–98																		
1898–99																		
1899–1900																		
1900–01			1						1									
1901–02	1		1	1	1				1									
1902–03	1		2	1						2								
1903–04			2	1						1								
1904–05			3							1								
1905–06			4				2		1	7								
1906–07	1		3	1			1		1	1	7th	7th						
1907–08	1	1	2								5th	6th	5th	1st				
1908–09		1				1	1			2	2d	5th	5th	4th				
1909–10										1	7th	7th	2d	5th				
1910–11					1	1				1	No team	5th	3d	5th				
1911–12						1		1		3	6th	7th	3d	6th				
1912–13			1			1	1			2	7th	8th	2d	6th				
1913–14		3	2			1	1			3	5th	6th	1st	4th				
1914–15		3	1				1			3	1st	4th	4th	5th				
1915–16		3					3			1	1st	5th	1st	2d				
1916–17		3				2	2			2	No teams	5th	4th	5th				
1917–18		3				1	3							War declared.	No team	1st	1st	6th
1918–19		1		1	1												No sports in spring	1st

THE PROBLEMS AND THE OPPORTUNITIES OF THE VETERINARIAN

By Walter L. Williams

When a number of individuals become grouped together for the purpose of advancing a special branch of higher learning essential to the welfare of the public, the group is commonly known as a profession. Each profession is equally necessary, though one may require for the proper performance of its functions a greater number of members. Veterinary medicine, historically old, is new in its broad application to the needs of the people and to the animal industry of the country. Its importance to the state is increasing rapidly. It is a highly diversified profession, embracing the innumerable diseases of the various species of domesticated mammals and birds, and of the wild animals in captivity. In the early development of veterinary medicine, the persons having to do with animal diseases consisted of a number of unassociated, incoördinate individuals. The environment of one led him to devote his attention to the diseases of horses. Another concentrated his attention upon the diseases of cattle, dogs or other animals.

With the development of the profession, the analogy, and frequently the identity, of the diseases of various domestic animals and their relation to the diseases of man were recognized. Finally veterinarians studied primarily the diseases of all domestic animals, the individuals concentrating their energies upon the diseases of one species of animals or even upon one or two diseases of a certain species.

It has largely been the aim in education and in practice to keep human and veterinary medicine apart, but at many points this has been impossible because numerous transmissible diseases are common to man and to the domestic animals. Hence it is essential that both human and veterinary practitioners of medicine shall understand and be able to cope with this important group of maladies. In this field the veterinarian stands first because the prevention of the transmission of such diseases to man is dependent upon their recognition and control in animals. The relationship between the health of animals and of man is not limited to ordinary contact but has an important place in connection with the supply of meat and milk for human food. Many veterinarians are engaged in the inspection of meats and milk in order to guard against the transmission of disease to man by foods of animal origin.

The most primitive office of the practitioner of human and of veterinary medicine is the cure or alleviation of illness, but the highest and most valuable function of each is the prevention of disease. Many preventable diseases, when established, are difficult or impossible of cure. Rabies can be prevented in man by its control in dogs, and glanders in man must cease when glanders is eliminated from horses. The perils to the greatest numbers of people come, not through such diseases as rabies and glanders, but from the less conspicuous maladies arising from food, especially from milk. The safeguarding of people, especially of young children, against the dangers lurking in milk, which is their chief diet, demands much attention and study by veterinarians. The actual amount and seriousness of the danger from milk are not fully known; we do know, however, that the peril from impure milk is very great and that the subject demands much study. Nor will the

necessity for study ever cease; the mutations of disease go on forever. When one peril has been suppressed or controlled, others arise, thus rendering the necessity for study in this field perpetual, and offering to the alert veterinarian an unsurpassed opportunity for rendering a conspicuous service to the public.

While we are wont to emphasize the healthfulness of meat or milk far above the volume of the food product itself, the latter is not to be forgotten. It cannot yet be determined which cost the more human lives in the world war, military casualties or starvation due largely to lack of meat and milk. We have been so accustomed to plenty of meat and milk that a famine of these appeared impossible, but war has taught otherwise. The veterinarian has, therefore, not only an opportunity to render a great service by guarding man against dangerous foods of animal origin, but an equally great opportunity in controlling diesases which lower the capacity of animals to produce meat and milk. The people of America at present feel most keenly the insufficient and low quality of milk, but they are beginning to realize also its excessive cost. Ultimately the people must realize that the cost of milk is fundamentally dependent upon the amount which a cow can produce in relation to the amount of food consumed. Since a cow can normally produce milk for a period usually of but nine or ten months after calving, she needs, for highest efficiency, to give birth to one healthy calf each twelve months. If she fails to conceive promptly after calving, or if she aborts, there is a serious loss from lowered milk production for which, in the end, the consumer must pay in the form of a higher price for milk. It is essential, also, to economic dairying and the production of animals generally, that the fertility shall continue unabated over the maximum period of time. Statistics available from pedigreed herds show that females of breeding age, during a series of years, produce on an average only two to three calves each while in the herd, as against a possible maximum of twenty. Some of these had produced calves before entering the herd and others still remained in the herd and might have produced additional calves, but even so, the average number would not exceed four or five. It requires two years to grow a heifer to dairying age. If this heifer produces a calf at two years of age and thereafter one calf at each interval of twelve months up to the close of her fourth year, and milks satisfactorily for ten months in each lactation period, she will, at five years of age, have been a producer for thirty months and a non-producer for the same length of time. Each additional healthy calf she produces at intervals of twelve months will add to the balance of the duration of production over non-production, and increase correspondingly the supply of food for man.

The best bred and potentially most efficient animals most frequently fail to reproduce regularly and abundantly. It is the efficiency of these animals that the state, as well as the individual owner, desires most to preserve and advance because, with the changing conditions of civilization, there is pressing need for higher individual efficiency of animals in order to avoid multiplying their numbers in the same ratio as the world's increase in population. That is, each animal needs to produce more human food or do more work than heretofore in order that the world may not be overcrowded and that too large a volume of food shall not be consumed by animals of low efficiency. The skilled veterinarian needs to guide and direct such increased reproduction of the most efficient animals. Problems of great complexity confront him in this field. After satisfactory reproduction of the most highly efficient animals has been attained, the conservation of such efficiency

demands veterinary supervision throughout the life of the animal. The animal needs to be guarded against the perils of dangerous foods, preventable accidents, and contagious diseases. The dangers to animals from foods are little known. It is well known that certain plants, larkspur, hellebore, etc., cause fatal poisoning when eaten by domestic animals. We know also that numerous mineral substances, like lead and arsenic, when contaminating foods, cause severe losses to owners of animals, and that lead, in the form of lead paint used about cattle stables for preserving wood and metal used in stable construction, causes many fatalities. It is also known that otherwise healthful foods which have undergone harmful changes in curing or preserving or even while growing, cause disease, but the knowledge of this group of dangers is exceedingly meager and demands a large amount of study in order that the health of domestic animals may be rendered far more secure.

It is also well known that improper feeding with good foods produces serious diseases. These causes of disease need to be studied far more carefully than has yet been done and greater protection afforded to the health of animals.

Many preventable accidents to animals occur which the veterinarian may prevent or, if they do occur, he may restore the animal to health and usefulness.

Each extensive region has its special diseases of animals which threaten the well-being of the nation and offer special problems to the veterinary profession of the country involved.

Many of the great animal plagues are for a long time restricted to a given country, though capable of causing equal or greater destruction when introduced into countries previously free. America knows little of Rinderpest, Foot-and-Mouth Disease, and the Contagious Pleuro-Pneumonia of cattle, the three most destructive acute diseases of the species. Through the alertness of the veterinary service, Rinderpest has been successfully barred from our country, while Pleuro-Pneumonia and Foot-and-Mouth Diesase, although introduced, have been timely recognized and eradicated. Constant watch is being kept at every port of entry to prevent the introduction of these and other diseases and the watch must be continued perpetually. With the best watch that may be kept, exotic disease now and then slips in and there needs to be an alert veterinary profession prepared to recognize the invasion early and to take effective measures for eradication.

Many serious diseases of animals already have a firm hold in every country and efforts are constantly being made to control or eradicate them. A vigorous and virtually nation-wide battle is being waged against Hog Cholera, which has long been a tremendous factor in lowering the wealth and the food supply of the nation. The Texas, or Tick Fever, has from early times held back the cattle industry of the southern States, and during the warm season has been a constant peril to the cattle of the North. The veterinary service of the nation has drawn a cordon across the country from ocean to ocean and year by year that line is being carried southward, pushing the plague before it and freeing large areas for profitable cattle breeding and dairying. Ultimately, and not many years hence, the disease will be driven from American soil and a watchful veterinary profession will keep it out.

The chronic diseases, like Tuberculosis and the Abortion group, offer a supreme test to the veterinary profession. Insidious and unending, Tuberculosis has crept into every country. An inconceivable amount of work and study have been devoted to Tuberculosis in man and animals. Its control in cattle, as in man, has

made gratifying progress, not so much for what has been completed, as for the assurance of our power to control and greatly diminish its ravages. The work is merely begun, and while a point has been reached where rapid progress is assured, there remains an abundant opportunity for work, study, and service for many years to come. Innumerable other diseases of animals, constantly threatening the wealth and health of the nation, offer illimitable opportunity to the veterinarian for rendering valuable service. The importance of these services is being more and more recognized by the public.

The opportunities presenting themselves in veterinary medicine for rendering valuable services to the public are unexcelled in any walk of life and are so varied that each veterinarian has a wide range of choice.

Veterinary medicine has suffered much and its advancement has been hindered through a misconception and undervaluation by both state and individual. Until recently the state has regarded the health of animals as the concern of the individual alone, but thinking people are compelled more and more to recognize that while the individual legally owns the animal and its valuable products, the state is no less vitally concerned. When a highly efficient dairy cow ceases to yield milk and to produce efficient progeny for the production of milk, the people of the state are deprived of that source of food supply, and in the end sustain the loss due to the failure either in the scanty food supply or in its higher cost. Anglo-Saxon governments have been remarkably slow to recognize the value of veterinary medicine to the state, and institutions for higher education have, until recently, failed to recognize veterinary medicine as deserving a place coördinate with other learned professions. Instead, the teaching of veterinary medicine was left to the weaknesses and caprices of individuals independent of state control or supervision. Cornell University was the first great Anglo-Saxon university to recognize and champion the value of veterinary education and to maintain it upon a standard coequal with that of any other study.[1]

Under the leadership of Cornell University, embodied especially in its founder, its first president, its first professor of veterinary medicine, and the present heads of the university and college, the State of New York came to appreciate and officially recognize the value of veterinary medicine to the state.

Cornell University early secured and has faithfully maintained a leadership in veterinary education to which the State of New York has extended loyal financial support.

Young men in quest of a field offering opportunity for service have until recently largely evaded veterinary medicine because it had not been recognized by the state or by great universities as a learned profession. Each young man, in search of a field for usefulness, saw near at hand an uneducated, unrefined "horse doctor" or "cow doctor" and his horizon regarding veterinary medicine began and ended there. But under recognition by the state and by great universities, veterinary medicine now stands out clearly and readily recognizable as a learned profession, inviting the highest ability in a field of unexcelled usefulness.

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[1]While it was the first of Anglo-Saxon universities to thus recognize the dignity and value of veterinary medicine, it now stands alone amongst the older institutions in that it still holds, after fifty years of distinguished service, as a highly honored member of its faculty, its original professor of veterinary medicine.

Veterinary medicine as a professional field constantly grows more attractive. From year to year the veterinarian comes in contact with better men and better animals, and occupies a higher place in public esteem. When great institutions of learning like Cornell University establish courses in veterinary medicine, requiring the same preliminary education for entrance as in other colleges, and four years of special study of veterinary science, the graduate in veterinary medicine stands upon precisely the same educational plane, and is accepted educationally as the equal of the other alumni. The work of the veterinarian is chiefly with animals belonging to educated men who appreciate skill and learning. The great groups of animals, whether valuable cattle or horses, are chiefly owned by men of education and refinement. The successful pursuit of animal husbandry requires the highest degree of intelligence and knowledge of any branch of agriculture. Such men appreciate skilled veterinary service and gladly remunerate the veterinarian accordingly.

General veterinary practice offers the largest field to the veterinarian numerically and financially. The competent and vigorous veterinarian in a reasonably good location enjoys a satisfactory income, enabling him to live well and to accumulate a fair financial reserve. The earnings of the average veterinarian are as great as those in any profession though he does not reach the maximum income enjoyed by a few members of the medical, engineering, or legal professions.

Civil service furnishes employment for a large number of veterinarians in federal, state, and municipal positions. In the federal service (veterinary inspectors, etc.), the salary is at first $1500 a year with increases after specific duration of satisfactory servce. The appointment to office is permanent during good behavior and physical ability.

The military veterinary service has recently been advanced in America so that army veterinarians are commissioned officers with minimum pay of $1700 a year advancing in rank and salary with satisfactory service, with the usual army pension upon retirement.

Teaching and research work afford employment, inviting in many repects, to a long list of veterinarians, the salaries reaching $4000 a year, and in a few instances a higher figure. There is no field offering a more interesting opportunity for research than the illimitable variety of animal diseases. Virtually all agricultural colleges either have one or several veterinarians engaged in teaching or research, or have veterinary colleges connected with them.

Each state and many cities employ veterinarians at good salaries for the control of disease and the inspection of meat and dairies. Some owners of extensive herds of high class horses or cattle employ herd veterinarians.

THE RELATION OF THE VETERINARY COLLEGE TO THE STATE

By Veranus A. Moore

In the present efforts to readjust the work of the New York State Veterinary College at Cornell University, so that it may perform its functions more efficiently, it is fitting to call attention to some of the things it is doing for the State in return for the support it receives. It is important that this relationship be appreciated. Nowhere in the system of higher education is there a stronger obligation than that of state supported schools to return value received in honest, intelligent effort to accomplish the purposes for which they were established. For this reason we are making an inquiry to ascertain what our faculty and alumni have done, and what they can do, to make this institution a more valuable asset. The permanency of this college depends upon the success it attains in actually supplying the live stock owners and others interested in the animal industry of the State with a better veterinary service.

A study of the history of veterinary science in America will reveal the cause for the close association of the veterinary work of this State with Cornell University. At the time of its opening, in 1864, very little was being done in this country to prevent or to treat the diseases of food-producing animals. The country was supplied abundantly with animals and their products. The known plagues of dumb creation had not been widely disseminated, and the diseases that develop as a result of overcrowding animals and long continued occupancy of the soil had not become troublesome. The great ranges were open and there seemed to be an endless supply of live stock. In these circumstances, the losses sustained from both infectious and sporadic diseases were negligible and consequently received little or no attention. The founders of the University, however, foresaw that with the increase in population there would be correspondingly greater demands for live stock production and a need for more effective veterinary and sanitary service. In keeping with the purpose of the Morrill Act, providing for the land grant colleges, the University established a department of veterinary science. It placed at its head a native of Scotland who had been trained in the veterinary schools of Europe and who was familiar with the existing knowledge of animal diseases and the methods for their control. This beginning in the study of the diseases of farm animals in America was followed by other land grant colleges.

After years of untiring effort, it became evident to the University that instead of a *department* of veterinary science, where students could be instructed only in the elements of the subject, there should be a *college* where researches in animal diseases could be made and where men could be trained for veterinary practice. Impelled by this necessity, Cornell University recommended to the Legislature the establishment of a state veterinary college at the University and suggested that its administration be delegated to the trustees of that Institution. A further reason for this recommendation is found in the fact that the private veterinary schools already in operation had failed to meet the general demands of the animal industry of the State. In part this was due to the fact that they were located in the great cities far away from the environment of the food producing animals.

The University, situated in the heart of an agricultural district, appreciated the work called for to safeguard the animals which were producing the meat and dairy products, wool and leather for our steadily growing population. The University saw that this was not being done and that it could not be done through the agency of veterinary schools dependent upon the fees of students for their support. The economic importance of an efficient veterinary service, the knowledge that must be acquired before this service could be obtained, and the facilities required to adequately instruct veterinary students made it clear that researches in animal diseases and veterinary education were state functions. They had been recognized as such in continental Europe as early as 1762.

In 1894, the legislature, already apprehensive of the spectre of animal diseases, accepted the recommendation of the University and the appeal of Governor Flower* to establish under the auspices of the State a college of Veterinary Science. It was logical for it to coöperate with the institution that saw the approaching danger to the greatest of our agricultural activities, and that presented a constructive plan to prevent the impending disaster to our live stock industry.† The

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*In his message to the legislature in 1894 Governor Flower, after calling attention to the diseases of cattle and a proper regard for the health of the community, stated, "But the chief obstacle to a correction of this evil is the lack of experienced and capable veterinarians."

†The direct property losses from the infectious diseases of animals in the United States in 1915 were estimated by the Secretary of Agriculure to be $212,010,000. The indirect losses, which also are very great, cannot be estimated at all. The losses from each of the different diseases as given by the Secretary are shown in the appended table. As New York State contains, according to the official statements, 6% of the dairy cattle in the United States, 2% of the other cattle, 2% of the horses, 1.7% of the sheep, 1% of the swine, .08% of the mules and 7% of the poultry, it is fair to estimate that New York's losses from the diseases prevalent in the State are proportionate to her percentage of animals. With the present high prices, the losses are correspondingly greater.

Disease	*Loss in U. S.*	*Percentage of Animals in N. Y.*	*Estimated Loss to N. Y.*
Hog cholera	$75,000,000	1% swine	$750,000
Texas fever	40,000,000	8% cattle	none
Tuberculosis	25,000,000	6% dairy cattle 2% other cattle	2,000,000
Contagious abortion	20,000,000	6% dairy cattle	1,200,000
Blackleg	6,000,000	cattle	slight
Anthrax	1,500,000	13% all animals	195,000
Scabies	4,600,000		slight
Glanders	5,000,000	2% horses	100,000
Other diseases	22,000,000	13% of all animals	2,860,000
Parasites	5,000,000	13% of all animals	small
Poultry diseases	8,750,000	7% of all poultry	612,00
Estimated total loss for New York State			$7,717,000

In the spring of 1918, a questionnaire was sent to a considerable number of practicing veterinarians in this state to ascertain the ratio between the sporadic and the infectious diseases which they were called upon to treat and also which group caused the greater losses. The replies showed that the diseases usually recognized and handled as infectious caused less than 25 per cent. of the troubles for which veterinary service is required and less than 20 per cent. of the losses from death.

legislature did better than it thought, for the coming of the motor car has so readjusted the needs for veterinary service that, for the greater part, they are now restricted to farm animals which yield nearly two-fifths of all the agricultural products of the State.* Had the gasoline engine not come there would have been the same need for the college to provide for the conservation of farm animals.

In establishing the veterinary college, the State wisely provided that its students, and all other candidates for a license to practice, should have an adequate preliminary education. This was in harmony with the conception then finding expression in the land grant colleges, that education should be "suited to the needs of the country." Further, in carrying out this principle, the act providing for the administration of the college clearly defined its purposes. They included three distinct lines of work, each of which is an integral part of an efficient veterinary service, namely: researches in animal diseases, the preparation of biologics to be used for diagnostic and prophylactic purposes, and teaching the sciences that combined make up the symptom-complex of veterinary medicine.

The objects the State desired to accomplish through the agency of this college were clearly set forth in the statute. They call for efficiency in service and anticipate full coöperation between the practitioner and the animal owners. They assume that the men who avail themselves of tbe opportunities provided by the State to become veterinarians will be professional men and as such imbued with the principles and dominated with the desire to render efficient service in partial return for the advantages and privileges which they have enjoyed. As the State has performed its part in the reciprocity plan for veterinary education, the questions before us at this time pertain to the attitude of the college toward its obligations, and to the character of the work it has done and is doing to meet them.

Examination of the records shows that from its beginning the college has coöperated with the State officials in the control of infectious diseases of animals and with the practitioners to advance in every way the live stock interests of the State. Wisely, the college has no administrative or regulatory duties. Because its work is educational, its value is to be found in the accomplishments of both the faculty and alumni in acquiring knowledge and applying it for the benefit of animal owners. That they have recognized their obligations is proved by the varied

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*The last Year Book of the U. S. Department of Agriculture gives the number of animals in the State as follows:

Horses	609,000	valued at	$84,651,000
Mules	4,000	" "	620,000
Milch cows	1,539,000	" "	101,574,000
Other cattle	939,000	" "	29,109,000
Sheep	840,000	" "	7,056,000
Swine	759,000	" "	11,157,000

This is a decrease since 1907 of 86,000 horses, 287,000 cows, 5,000 other cattle and 280,000 sheep. There is an increase of 84,000 hogs. Notwithstanding the decrease in numbers, the total value is estimated to be $234,000,000 or an increase of more than $61,000,000 over that of 1907. In addition, the poultry of the State was estimated in 1918 to number 17,476,000 valued at $12,000,000. In 1918, it is estimated that there was a larger number of animals than in 1917, but the human population has increased more rapidly. This is true for the country at large. In 1900, the per capita production of beef cattle was two-thirds of an animal, and in 1918 it was but two-fifths.

directions in which their professional efforts have been expended. They may be grouped as follows, namely:

1. Technical assistance to the State officials in the control of communicable diseases of animals.

2. Research and investigational work resulting in new knowledge of improved methods for the control of animal diseases.

3. The preparation of diagnostic and prophylactic biologics to be used in combating animal plagues.

4. Teaching students the science of veterinary medicine.

5. Services rendered by the alumni to the live stock owners through the various phases of their professional work.

As the administration of the college was delegated to the trustees of the University, mention should be made first of the assistance they have rendered to make it possible for the college to carry out its plans. In 1908, it became evident that important researches and other functions, such as making anti-hog-cholera serum, were impossible without the use of additional land. When this was made clear, the trustees purchased a farm of 100 acres, situated near the college, and turned it over without reservation for a veterinary experiment station. This enabled investigations to be made that otherwise would have been impossible. It should be stated further, that the trustees have coöperated unselfishly and gladly to make the work of the college as helpful and beneficial to the State as possible. They have maintained the same active interest in veterinary education and research that characterized the early efforts of the University when it established the department of veterinary medicine and placed it on a par educationally with other sciences and the humanities.

1. *Technical Assistance.* As the State had not made provision for the technical work required in live stock sanitation, the college was able to render immediately valuable service in connection with these matters. Such maladies as anthrax, hog cholera, rabies, glanders, tuberculosis, Johne's disease and others had been introduced and they were spreading without successful effort at control. The practitioners of those days were unfamiliar with the nature of these diseases and consequently helpless in combating them. There was a lack of facilities for this work as well as a scarcity of men trained in the principles of modern live stock sanitation. At that time, when these diseases were becoming a serious menace, and when the Commissioner of Agriculture was practically without veterinary assistance,* the college was able, as anticipated by its founders, to provide both laboratories and workers to assist the Commissioner who was officially charged with the protection of our live stock against infection. A few specific instances illustrate these points.

At that time there were losses of serious proportions among hogs. The cause was reported to be hog cholera. The investigation failed to reveal the presence of any lesions suggestive of that disease. After diligent search it was found that these outbreaks were not due to a specific infection but to poisoning with powdered soap, as this substance was being introduced into the rural districts. The publica-

*For a number of years, the State Department of Agriculture did not employ a veterinarian except as occasion seemed to demand it, and then on the *per diem* basis.

tion of the findings with precautionary instructions put an end to the losses from that cause.

In 1904, a disease appeared among the cattle in the northern part of the State, in which fifteen herds were affected, with many deaths. The alarm was abated when the diagnosis of anthrax was made and efficient prophylactic measures adopted. In 1906, another outbreak occurred extending to 84 farms. Here again the college made the diagnosis and sent men to direct the control of the disease which had already caused the death of more than 150 animals. Through the application of prophylactic treatment, the spread of the disease was checked.

Later, a disease of horses appeared which extended over a wide territory and caused serious losses. Its nature was not known and it was gradually spreading with disastrous results. Again, at the request of the Commissioner of Agriculture, an investigation was conducted which resulted in identifying the disease as that of infectious anemia and formulating a method by which it could be diagnosed. With this information it was possible to minimize its further spread.

In order to assist those in charge of the regulatory work, the college has made numerous investigations and reports. Among these may be mentioned those on "Anthrax and its control," "Bovine tuberculosis" and "Bacteria in milk." As these answered many puzzling questions at the time, they were published by the Commissioner of Agriculture and given a wide distribution in the State. On several occasions, instructions on important special subjects have been published by the college and a copy sent to each veterinarian in the State when it appeared that such information would be of immediate assistance in saving food-producing animals. Mention should be made of three of these, namely, "Foot and Mouth Disease," "Hog Cholera and Its Prevention," and the "Diseases of Sheep." These have been of great assistance to the practitioners and to the live stock owners.

One of the serious difficulties encountered in the administration of the law relative to the control of infectious diseases was the diagnosis of rabies. From 1899 to 1907, there were very few outbreaks of this malady in New York, but in 1908 it occurred in many places. It was important that whenever this disease appeared, it should be accurately diagnosed in order that proper quarantine could be enforced and also that those who were infected could be properly treated. The college made the diagnosis for the Department in all outbreaks, other than those in Greater New York, and reported the findings.*

The college has maintained a laboratory for the diagnosis of communicable diseases and also for the identification of tumors and other disease processes. This has been of great assistance to officials as well as to owners of animals and of veterinarians throughout the State.† The early diagnosis has enabled the local

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*We have made examinations for the diagnosis of rabies in 3,378 animals up to July 1, 1918. Of the total, 1,681 were positive; 1,417 were negative; and in the remainder, the diagnosis was imperfect because of the condition of the specimens when received.

†The report for 1917–18, which may be taken as a representative period, shows that during the year examinations for diagnosis were made of 68 specimens for actinomycosis, 98 for anthrax, 24 for blackleg, 128 for glanders, 11 for septicemia hemorrhagica, 5 for Johne's disease, 36 for parasites, 290 for poultry diseases, 210 for rabies, 22 for tuberculosis, 242 of tumors, and 215 of a miscellaneous character.

veterinarian, or the Commissioner of Agriculture, to institute immediately preventive measures. By this means, outbreaks of diseases, previously very destructive, are checked promptly, and gradually these maladies are being eradicated. The college is doing in this respect the work for the State that elsewhere is performed by a laboratory maintained by the live stock sanitary authorities.

2. *Researches and Investigations.* The research work and investigations into the nature of animal diseases have been numerous. At this time, it is impossible to go into detail concerning these investigations, some of which have been of much scientific and professional value and others of direct and immediate assistance to live stock owners. They have included the development of new and important operations such as that for "roaring," "poll evil," and intestinal intussusception. These have enabled practitioners to save many valuable animals.

For years, the Department of Agriculture was annoyed constantly with numerous litigations in connection with "bob veal." A thorough investigation of the vexed questions connected with the subject eliminated many of the difficulties. These researches demonstrated that young veal is not harmful for human consumption and consequently the age at which calves may be slaughtered for food may vary within several days with perfect safety to the consumers. This investigation not only assisted in modifying public opinion on this subject but also in making the law more flexible, with much saving to both the State and the people.

The researches into the elimination of tubercle bacteria from tuberculin reacting cattle, the introduction of the sputum cup as a means of diagnosing open cases of tuberculosis, the verification of the agglutination method for the diagnosis of glanders and its introduction in this country, the extended inquiries into infectious abortion and sterility in dairy cattle, the researches into the means by which hog cholera is spread through infected meat, the working out of the life history and methods of control of bacillary white diarrhea in chickens, are among the contributions that have been made to better the live stock industry of the State. For the benefit of veterinarians, these have been published in scientific journals, in the proceedings of veterinary societies, and in the annual reports of this college. In some instances, where the findings were of direct value to animal owners, they were given to agricultural papers or issued as bulletins from the Cornell Agricultural Experiment Station.

In addition to the above, a large number of researches have been made in connection with other phases of animal diseases and on anatomy, bacteriology, and physiology. The findings have been published in many papers and have added materially to the knowledge of veterinary science. The value of this work cannot be measured, for it is adding steadily to the efficiency of the practitioners whose purpose is to conserve the health of animals through the agencies of preventive medicine and therapeutics. Their success will be in direct proportion to their knowledge of the subject.

3. *The Preparation of Biologics.* At the time this college was established, very few biologic products were in use for diagnostic or prophylactic purposes in veterinary medicine. The college undertook immediately the preparation of tuberculin, which had but recently been discovered, for the diagnosis of tuberculosis. It also prepared mallein for the diagnosis of glanders, and vaccine to prevent anthrax. A little later the preparation of anti-hog-cholera serum was undertaken at the request of members of the State Swine Breeders Association.

The college has satisfied the demands, for it has been able to supply all requests for these products from veterinarians and animal owners of the State.* It has not undertaken the preparation of tetanus antitoxin or black leg vaccines because of the very small demand for them.

4. *Instruction.* The curriculum calls for a course of four years of nine months each. It is adapted primarily to the needs of men who are going into practice, but opportunities in all of the subjects are given for advanced and graduate students who wish to teach or to do research work. The subject matter is presented in lectures, recitations, and practical laboratory exercises and clinics. The instruction in the theory and practice of medicine and surgery is supplemented by an abundance of clinical material. The college has the exceptional advantage of situation in a farming community where students can study the diseases of farm animals under the actual conditions encountered by practitioners. Our ambulatory clinic has been developed for this particular purpose. Every student who is to be graduated has an opportunity to observe and to take part in the treatment of many animals under such conditions. This clinic has demonstrated the economic significance of prompt and efficient veterinary service and confirmed the opinion of many practitioners that early attention and a careful watching of the cases will restore to usefulness many animals that otherwise would be lost. This emphasizes the important part veterinarians are to take in the conservation of the live stock of the State. A corollary to this is found in the statement made in the Crop and Live Stock Report of New York State by the U. S. Department of Agriculture that "during the year ending March 30, 1918, the losses from disease among the horses, cattle, sheep and swine on the farms of this State [New York] were in every case below the average." This is an indication of improved veterinary service.

In the surgical clinic a large number of important operations are performed. They are comprehensive in their scope for they include not only those that are called for in the regular city and country practice but also the unusual operations performed on animals sent here for that purpose. This gives students exceptional opportunities for surgical instruction and experience. The clinics are provided with equipment for making the determinations that are necessary in diagnosis, such as urine and blood analyses and bacteriological examinations. In addition, the special laboratories are available for continuing work of this kind. The efficiency of the instruction is enhanced greatly by the investigational work in progress and the opportunities to make diagnosis both in the clinic and in the laboratory. In these ways the students touch the problems in veterinary medicine as well as the theories of practice. They become familiar with the requirements necessary for the practitioner in order that he may make accurate diagnoses and apply the methods necessary to treat, combat, or eradicate disease. The placing of students in such an environment is of inestimable value in bringing them to an intelligent understanding of the problems in their profession. It prepares them to be con-

*The report for 1917–18 shows that during the year the college furnished the Department of Agriculture and the veterinarians of the State, 72,000 doses of tuberculin, 6,000 doses of mallein and 15,400 doses of anthrax vaccine. It also distributed 308,480 mils of anti-hog-cholera serum and 4,700 mils of hog-cholera virus to veterinarians having authority to use it for permanent immunity against cholera. The demand for tuberculin, anthrax vaccine, and anti-hog-cholera serum is steadily increasing.

structive leaders in the animal husbandry of the State. I feel justified in making the broad statement that the instruction is comprehensive and thorough and that it is growing more efficient with every year.

The teaching function of the college is not restricted to the undergraduates. A large correspondence is carried on with practitioners and animal owners relative to various diseases. A conference is held each year for the practitioners at which the important veterinary questions of the time are discussed by those best qualified to do so. This conference is attended by fully 20 per cent of the practitioners of the State. Further, the class rooms, clinics, and laboratories are open at all times to the practitioners. The faculty is made up of experts in their respective lines and they are always ready and willing to give whatever assistance they can. Another factor of steadily growing importance is the library,* which contains modern literature on practically all phases of veterinary work. In fact, the college has become a professional home for the veterinarians of the State where they can come for study or assistance.

5. *Students and Alumni.* On account of the high entrance requirements, wisely imposed by the University authorities and incorporated in the practice law of the State, the number of students attending the first years of the college was small. The average annual registration from 1896 to 1904 was 48; the average number from 1905 to 1915 was 109; and in 1916 it was 153, notwithstanding the course had been extended from three to four years. On account of the war, the number entering the college since 1917 has been much smaller than it was prior to that time, but there are good indications that in the near future the full number will be restored.

Up to and including the class that went out in 1918, there have been 497 students graduated. Of these 434 came from New York State; seven came from six foreign countries and 56 from sixteen States other than New York. There are 279 graduates located in New York State, the greater number of whom are in practice.† For the reason stated above, a large majority of these have been graduated during

*The college library contains 5,610 volumes. It receives 106 periodicals on veterinary medicine and closely allied subjects. This has come to be one of the leading veterinary libraries in the country. It is consulted more and more not only by students but also by the practitioners of the State. It is open continuously during the college year with a trained librarian in charge who, in addition to the regular duties, gives instruction on how to use a library. This library is known as the Roswell P. Flower Library in honor of Ex-Governor Flower, who gave $5000 to purchase books and whose widow endowed it with $10,000. In addition, the general library of the University is open to all students. This contains nearly 500,000 books including complete sets of the most important scientific periodicals.

†A word of explanation seems proper relative to the fact that a large number of the earlier graduates did not practice in New York. At the time the college was opened there were many veterinarians in the cities and the development of veterinary practice in the country had scarcely begun. Further, there was an unprecedented demand for veterinarians in government work and the agricultural colleges and experiment stations were rapidly taking up problems in connection with animal diseases for which they were calling for veterinarians who had had the advantages of a University training. Because of the abundance of men already in practice and the exceptionally good opportunities in government service and educational and research institutions, the number of graduates who went into practice for the first ten years was relatively small. Since that time the opportunities in the country have been appreciated and a large majority of the graduates have taken up practice in this State.

the last ten years. The real value of the college to the animal owners will be found largely in the success of its alumni in treating and preventing diseases which are the cause for the greatest losses to the live stock industry. The only way to reduce these to a minimum is with a better veterinary service, animal hygiene, and sanitation. These will come about with a sufficient number of properly qualified veterinarians who have the confidence and coöperation of the live stock interests. A requisite for maintaining efficiency in animal husbandry is an understanding on the part of the owners of the many ways in which veterinarians are able to assist them, provided they are consulted in time. As veterinarians are the only people who are educated in the combination of sciences necessary for an understanding of the laws of disease and how to combat them, it is essential that the college provide adequate facilities for teaching all that can be taught to make men efficient practitioners. This it is trying to do and it has just cause for encouragement in the success of its alumni. As yet, its graduates are too young for an accurate estimate of the benefits that will accrue finally to the State from their loyal professional efforts when they reach the maximum of their usefulness. In the world war, 163, or more than a third of those living, went with the colors.

The alumni who did not remain in the State, or who came here from elsewhere and returned after graduation, have been no less active in their efforts to improve the veterinary profession. Many of them are holding responsible positions in the universities of at least ten States, the Veterinary School in the University of Manila and an agricultural college in Canada. They are meeting with success in teaching and research work. In 1917, there were fifty-four in the employ of the Federal Bureau of Animal Industry, eight were officers in the U. S. Army, and one an officer in the British Army. A few are in veterinary administrative positions.

The value of the college to the State is measured only in part by the assistance it has rendered in the *immediate* needs for the treatment and control of animal diseases. Of far greater significance is the reaction of the live stock owners themselves to the application of modern scientific knowledge. The teaching of the truths and principles of pure science in dealing with the problems of sanitation and the control of disease has already passed beyond the informational stage and is finding expression in the education of animal owners in the protection of their live stock. Further, with the development of scientific methods in veterinary work, the humane side has been developed. The instruction in surgery, for example, emphasizes not only efficient treatment but the use of anaesthetics as well. One of the valuable researches which has been carried on here was in connection with the best methods of producing safe anaesthesia in domesticated animals. In these ways the college has become a living influence for the best development of the animal industry of the State. This means minimizing the losses from physical disorders, preventing epizoötics, and securing the maximum conservation of animal life.

In conclusion, it is hoped that this brief summary shows that the University has kept its covenant with the State; that the faculty and alumni have realized their obligations and have tried faithfully to meet them; and that this college has been an influential factor in elevating veterinary education and in creating a better and more efficient veterinary profession. But with all this, only a beginning has been made in the solution of the many economic and sanitary problems connected with the animal husbandry of the State.

THE ADMINISTRATION OF THE COLLEGE AND ITS NEEDS*

By Frank H. Miller, Chairman

We, the State Trustees of this great University, join you in happy felicitation at this time of Jubilee and beg to submit the following brief report relative to the administration of this, one of the people's colleges, and its present and future needs.

The nature of this celebration would seem to justify us at the outset in pointing out that this particular college in a moral, and perhaps too in no inconsiderable financial, sense belonged to the people of the State of New York long before it became a chartered institution. The teaching of Veterinary Science drove its first tap-root more deeply into these hillsides on the Campus above Lake Cayuga, than at any other place on the Western hemisphere. What was at that time the Campus was Ezra Cornell's, and what was his was the people's. Reasoning thus, we feel that this development was for and of the people from the first day and hour in 1868 when instruction in Veterinary Science was announced in the curriculum of this University. The great founder had consecrated himself and his fortune, without reserve, to the end that the girls and boys of future generations might find light and life on easier terms than he himself had known.

There exists no evidence that there was any strong, impelling voice from the people, away back in the late sixties, urging the founder of the University, that outward-looking man, to send out into the highways and byways of the world his chosen representative in the person of President Andrew Dickson White (now of loving memory throughout the world), bidding him seek out and find that person who might be able to bring to our shores the exotic plant known as Veterinary Science, and nurture it for its worth alone, not as a thing of sentiment.

Exalt this event as we may in our minds today, we the people of this State and Nation must still come far short of any adequate realization of the magnitude of the blessings bestowed upon the future of the agricultural development of this young country, that day in the long ago when the cloak of inspiration of the noble Cornell was, by her trusted and faithful servant abroad, thrown about the person of that young, handsome, hardy, and erudite Scotsman, Dr. James Law. From that day he started out upon his half-century-long task of making Veterinary Science, by his interpretation of it, both understood and appreciated in this, the land of his adoption.

How well and fully he has succeeded, in his life work in our behalf, let this noble institution, as it now stands, bear ample and loving testimony, for it is none other than his handiwork. Long may the memory of his gentle person and benignant voice linger as a benediction about her.

In going over the early records of Cornell University, we find abundant evidence that there existed in the minds of those who watched over and shaped her early destiny a firm conviction that Veterinary education was to be indispensable in the development of a successful agriculture and, as a result of this conviction,

*A committee consisting of the state trustees was appointed to make a report at the College Conference or Forum on this subject. By request of the faculty committee, this report is published.

early committed themselves and their University to a consistent policy which culminated in the founding of this College. That the people of New York State were, in time, in full sympathy with the movement, we may fully assume, since the Charter was voted unanimously and became a law March 21, 1894.

It is interesting today to note that it was specifically set forth that the State was at that time establishing a Veterinary College to be located at the State Land Grant College, Cornell University, and perhaps for the purpose of this report quite as interesting to recall the words of Governor Flower's message advocating the measure that a College should be created which would "add to the existing knowledge of Veterinary Science, and educate experienced and capable veterinarians." We also venture therefore to assume from the phrasing of that document that it was intended to make clear to the minds of men acting in behalf of the people, that this College was to be for all time very much more than a mere instrument to graduate veterinarians. It was to be, first of all, a State Institution dedicated to the interpretation of certain natural phenomena, which, when properly understood, would constitute true Veterinary Science, and by virtue of this secondarily a place where competent veterinarians could be graduated, men capable of grappling with the great questions lying within their special sphere of knowledge.

This, beyond question, being the foundational rock upon which this Institution was originally built, it has been the purpose of your present Trustees, as it has been that of all those who have preceded them in the administration of her affairs, to act in the spirit of its founders and with the full understanding that we must, as an Institution, first make ourselves certain that that which we desire to impart to our students be, so far as human effort can make it so, based upon exact knowledge rather than theory.

During the years following the chartering of the College and up to 1909, the administration of her affairs, financial and pedagogical, was conducted by the Board of Trustees as then constituted, which in 1897 set apart from their body a Committee which was known as "The Veterinary College Council." This Committee comprised the President of the University (Chairman), the Treasurer, one Trustee, the Director of the College, *ex officio*, and two members elected by the faculty.

In 1909, owing mainly to the phenomenal development of our State Agricultural Educational policy, new legislation made it mandatory upon the Governor, subject to the approval of the Senate, to appoint five members to the Trustee Board at Cornell University, these members to be known as State Trustees.

On November 6, 1909, or immediately after the induction of the State Trustees upon the Board of Control, there was constituted a Committee known as the "Committee on State Colleges." This Committee comprised the President of the University, the five State Trustees, and one of the local Trustees, Mr. Van Cleef.

On June 23, 1910, acting upon the recommendation of a Special Committee, which had been set apart to study the question of the best administration for the State Colleges, it was resolved to enlarge the Committee on State Colleges, which in the future was to be composed of the President of the University, the State Trustees, the Trustee elected by the State Grange and Trustees Van Cleef and Pearson. Resolutions passed for the guidance of this enlarged Committee on State Colleges were as follows:

Said Committee in an advisory way and, subject to the approval of the Board of Trustees as thereafter to be provided, should have general supervision of the work of the State Colleges including any Council or Councils then organized in connection with such Colleges, the expenditure of their funds, the care of the State buildings and farms connected with State Colleges, the appointment and discharge of employees and all matters pertaining to said State Colleges. Said Committee was to provide for regular meetings at which the Deans of the State Colleges, or their respective representatives, should be present for advice and consultation and it was to report its recommendations to the Executive Committee for action thereon.

On December 16, 1911, the Committee on State Colleges was abolished and a Committee of eleven formed which was to be known as "The Agricultural College Council." At this meeting it was resolved that the administration of the Veterinary College was to revert to the General Board and its Executive Committee.

At the General Board meeting of April 23, 1912, it was resolved to set apart a body to be known as "The Veterinary College Committee." This Committee consisted of the President of the University, the Treasurer, the five State Trustees, the Trustee elected by the State Grange, the Commissioner of Agriculture, the President as Chairman. By virtue of the amended statutes of Cornell University adopted April 21, 1917, this Committee was designated as "The Veterinary College Council" and augmented by the addition to its body of the President of the State Agricultural Society, two Trustees to be appointed by the General Board, one of whom was to be one of the Trustees elected by the alumni, the Dean of the College and one Professor, a head of a department, to be elected by the faculty of his College for a term of two years beginning July 1st, 1917. The Comptroller of the University was expected to be present and take part in its deliberations. The Secretary of the General Board was to act as Secretary of the Council. Such is the composition of the Council of the Veterinary College at this time.

The "Veterinary College Council," in an advisory way and subject to the approval of the Board of Trustees, has general supervision of the work of the Veterinary College, the expenditure of its funds and all other matters pertaining to it. It holds four regular meetings during the year, and as many special meetings as may seem necessary. As a general rule its meetings are held the day next preceding the meeting of the General Board of Trustees. It prepares each year a budget or detailed statement of the moneys to be expended in carrying on the work of the Institution during the ensuing year, which budget, however, is not effective until approved by the General Board of Trustees. No liabilities can be incurred in excess of the amounts duly appropriated. It also has the management of all lands designated by the Board of Trustees for the use of the College. The Dean is authorized to make purchases for the College and its departments up to, but not in excess of, the amount appropriated by the General Board. He may use for the same purpose the circulating funds of the College, but no obligations may be incurred beyond amounts specified.

It is here to be noted that throughout the twenty-three years of the existence of this College every detail of its general educational and financial administration has, as the law requires, been subject in the most thorough manner to both the advice and control of the full Trustee Board of Cornell University.

The meetings of the Council are held in the Dean's office, the attendance usually being prompt and good. All phases of the college business are presented for discussion in a very comprehensive and direct manner by the Dean. Matters particularly pertaining to instruction are presented with such clearness of purpose as to give conviction that the Dean presides over an able faculty, at all times well in hand for team-work, and as a result we are obtaining a harmonious, useful administration of the College affairs from the bottom upward which seems to be the condition most ideal for teaching results today.

The Dean (formerly designated as the Director) of the College receives his appointment at the hands of the Board of Trustees upon the nomination of the President of the University, such nomination being accompanied by the written opinion thereon of the faculty over which he is to preside, and, subject to the authority of that Board and of the President and statutes of the University, has oversight and control of his College and all matters pertaining to it. He recommends to the President persons in his college for appointment as Professors, Assistant Professors, Instructors, and Assistants and is responsible for their efficiency.

Subject to the Superintendent of buildings and grounds, the Dean is responsible for the physical property of his College, has full control of all labor other than teaching, oversees and directs the instruction of students, and discharges such obligations as the Board of Trustees may direct, and makes report to the President.

All Professors, Acting Professors and Assistant Professors receive their appointments by recommendation of the Dean to the Council and by the President's nomination to the full board of Trustees, who elect by individual ballot, it being specifically understood that the lower grade of assistant does not automatically lead to the higher position, qualification alone being the final consideration.

Unlike the teaching appointments in the University proper, the appointments in the State Veterinary and Agricultural Colleges endure for one year only and to be valid must be reaffirmed yearly; the trustees, however, regard the appointments in the State Colleges to be permanent as in the remainder of the University with the exception that they do not assume the responsibility of continuing them if the State fails to make the necessary appropriation for them.

Professors, Acting or Assistant Professors, who have served the University continuously in some of these capacities for seven years may, subject to the approval of the Board of Trustees, have leave of absence for not more than one year upon half pay, or for one term with full pay under conditions which will secure certain efficiency of their departments during absence.

It is clearly stipulated in the By-laws of the University that members of the instructing staff shall give to the University all the time that may be necessary for a full and satisfactory discharge of their duties, and are subject to summary dismissal at any time for failure in this direction or for misconduct.

The one year tenure system, while it undoubtedly conforms closely to State policy for its employees generally, has for us the serious objection that it smacks somewhat of the day labor idea, which bears rather adversely upon those who may contemplate a teaching career along scientific Veterinary lines in an institution such as this. It also tends to make for uncertainty both for the man and the University or school, since the bond between them is far too purely a short financial consideration and strong University sentiment and coöperation are less likely

to prevail. In other words, University life suffers from it, and, coupled with the unprecedented demand for the services of Veterinary graduates of exceptional ability to take up permanent work in the multitude of enterprises open to them at remunerations so much higher than prevails in teaching today, short tenure may ultimately cut somewhat deeply into the teaching and investigational activities of this School.

The standards of teachers and teaching, investigators and investigations, alone fix the standards of scientific colleges, and it should, we think, become the paramount interest of the State first to demand high standards of qualifications for her teachers and to place them, as nearly as possible, upon the same footing as Professors usually enjoy in their connections with their universities throughout the world; not only this, but there should be such readjustments made in financing methods as to remove the prevailing inelasticity of appropriations which, at present, seems to make it all but impossible for us at times to retain permanently the services of men of great promise. We have, during the past ten years, lost several most brilliant teachers and investigators, who have gone to other institutions by reason of this somewhat faulty system. It is true that their services are not altogether lost to us, yet it cannot mean anything less than the success of other institutions at our expense. This College should, to maintain its pre-eminence, be placed in a position where it can command its situation so far as concerns its teaching talent.

The tremendous importance to the agricultural interests of our State and of the entire Nation of the question of animal diseases which we are here endeavoring to solve should make it incumbent upon the State under due safeguard so to adapt the system as to give us a fight upon even terms with all comers for exceptional men for this exceptional work.

We have only praise for the amount and value of the investigational work which has been done in our College in the past. That it could be so highly satisfactory under the conditions prevailing speaks volumes for those in charge. To be specific, we consider that the investigational work here carried on relative to the spread of hog cholera alone, if the results are availed of as they certainly should be by all the farmers in this State, could save more money to the State in one year than has been appropriated by it for the support of this College since its founding in 1894.

It has been our pleasure, as well as duty, from time to time to visit the Veterinary Experimental Farm where this work is mainly being carried on, and we have every reason to feel that it is being well conducted along approved lines of economy. We know of no other State where anti-hog-cholera serum is furnished to its swine breeders where the expense to the State is so slight as at this plant.

Numerous alterations have been made from time to time in the original buildings and new ones provided at small cost, which has greatly improved the service, but a certain amount of drainage is still required in the vicinity of some of the experimental buildings to fit them properly for service at all seasons. The location of the property, which is a sightly one, lying upon the sloping hillside only two-and-one-fourth miles removed from the main group of buildings on the Campus, which it overlooks, along with its suitable soil and water supply as well as easy approach, highly commends itself to our needs.

We feel that we are to be congratulated upon the fact that, after many years of patient effort, we are soon to have the south wing to the main building, but the exigencies of the times, which are, to say the least, extraordinary, are more and more emphasizing the alarming situation as to our available animal food supply as a nation, and should, we think, animate our State to push forward to the earliest possible completion the remaining units of the original system. That would give us the Pathological Institute which is to be erected immediately south of the main building.

This building is sorely needed not only for the proper housing of the entire department of Pathology and the co-related subjects of Bacteriology, Parasitology, and Laboratory Diagnosis, but to make full and complete accommodations for carrying two new chairs which must be added to our course, namely, a chair for special and toxicological Botany, and a chair for special researches in Chemistry, both soc oördinated as to give valuable instruction to both undergraduates and advanced students, in order that graduated Veterinarians may be able to deal scientifically and therefore more effectively with the whole question of food and fodder poisoning. These are subjects which the regular University courses in Botany and Chemistry do not and cannot be made to cover. The annual losses of stock from plant and other poisons are demonstrated to be of such proportion as to make us extremely anxious that these departments may be added in the near future.

The greatly increased demand throughout the State for biological products such as anti-hog-cholera serum, tuberculin, mallein, etc., has brought us to a point where we cannot, without some danger, materially increase the output unless special provision be made for the work. This necessity would be fully provided for in the new building for pathological work. This service to the State has come to form in itself one of our strongest reasons for advocating the early construction of this laboratory building.

We find abundant reasons for congratulating the Dean and the faculty of this College upon the results of their efforts in developing the various clinics and in their methodical utilization of them for teaching the practical branches of medicine and surgery. Particularly gratifying is the success of the valuable Ambulatory Clinic conducted outside the College among the stockmen in the immediate community, bringing, as it does, the students into close contact with diseases under the conditions they will encounter in private practice later. The value of this Clinic to a College which aspires to teach Veterinary Science as a real aid to Agriculture can scarcely be computed. Present indications are that this element in our Clinical development will, in the near future, be limited only by the time we can devote to it.

In connection with the further development of the School, we would suggest that, if possible, better arrangements should be made in the four-year course to give the students much more comprehensive instruction in animal husbandry and stock judging than has been possible heretofore. Veterinarians to be successful must sooner or later acquire this knowledge, but it should be theirs before graduation and great care should be taken that the course be of the highest order and upon the right kind of stock. The importance of the matter should, we think, commend itself to early consideration.

In view of the great advances in the cost of living during the past five years it would seem proper at this time to advise the early readjustment of the entire salary schedule of this College. With an increase of at least sixty per cent in the cost of the actual necessities of life, some effective steps should be taken by the State to bear an equitable proportion of the hardships it entails, which are very real to persons in her service with rigidly fixed incomes as is the case here. Such adjustment if properly made would do much in assisting us in retaining men whom we cannot afford to lose.

It would be indeed difficult, even perhaps quite impossible for us on behalf of the State, to express adequately the gratitude felt that it has been the good fortune of this, one of her important scientific schools, to have known the leadership of the illustrious Law and his equally worthy and noted successor, Dr. Veranus Alva Moore. Fearless and indefatigable scientific workers and natural leaders of men and minds, it is much that they have been present with us into and through the hot battle which has raged for higher veterinary education and while that system was, so to speak, in the state of flux on this hemisphere. Let the future hold what it may for American Veterinary education, it is extremely doubtful if it will ever again fall to the lot of any two men living and working within the realm of Veterinary Science in this Country to coördinate their ideals and efforts so as to obtain the immeasurable benefits to Veterinary science and education not only within our own State but throughout the Continent that have resulted from the lives of these two men upon our Campus. The value of their service to the State and Country can perhaps best be measured by the universal love and esteem in which their names are held throughout the Nation, wherever the true friends of Veterinary science are gathered together. The State is indeed fortunate that the lives of these men are being spent unselfishly in her service.

Finally, we wish to express our full appreciation of the spirit of healthy and earnest coöperation which we have found at all times prevailing among the members of the faculty of this College. Their cheerful submission to the rather discouraging condition of employment at times, due to the vicissitudes of the war and other things over which we had no control, makes us feel that it will be through no fault of theirs if this College fails to hold its place of preeminence during the piping times of peace which are to ensue.

BUILDINGS AND EQUIPMENT

By Howard J. Milks

The New York State Veterinary College occupies a group of buildings erected by the State on the Campus of Cornell University.

The main building, James Law Hall, faces East Avenue. It is 142 by 42 feet, three stories high with basement. This building is of pressed buff brick and stone construction with terra cotta ornamentation. In it are housed the Departments of Pathology and Bacteriology, and Physiology, the Museum, the Roswell P. Flower Library, the administrative offices and the offices of several professors. Connected with the main building and forming part of it is a wing or extension to the north 90 by 40 feet, two stories high and of similar construction. It contains a large lecture room and anatomical laboratories. The south wing, for which an appropriation has been made, will be similar in size and appearance to the north wing. It will be occupied by the administrative offices, the library, and an amphitheater. When this wing is completed it is planned to devote the entire first floor of James Law Hall to a museum.

The Medical Building, Small Animal Building and Farriery form a group on Garden Avenue, overlooking the playground and Alumni Field. They are constructed of tapestry brick and stone, each three stories high. They are well lighted and practically fireproof.

The Medical building is 160 by 44 feet on the ground floor. It is 100 by 44, with side extension for a large lecture room, on the second and third floors. It contains a classroom, laboratories, a clinic hall, and offices for the Department of Medicine and the Ambulatory Clinic, together with rooms for internes and an apartment for the attendant.

The Small Animal Building, 70 by 44 feet, contains an operating room for small animals, kennels, a lecture room, a museum, laboratories, and the offices of the Department of Materia Medica and of the Small Animal Clinic.

The Farriery is of the same size as the Small Animal Building. On the ground floor are an isolation ward and a cattle stable for the Department of Medicine. The rest of the building is occupied by the Department of Horseshoeing.

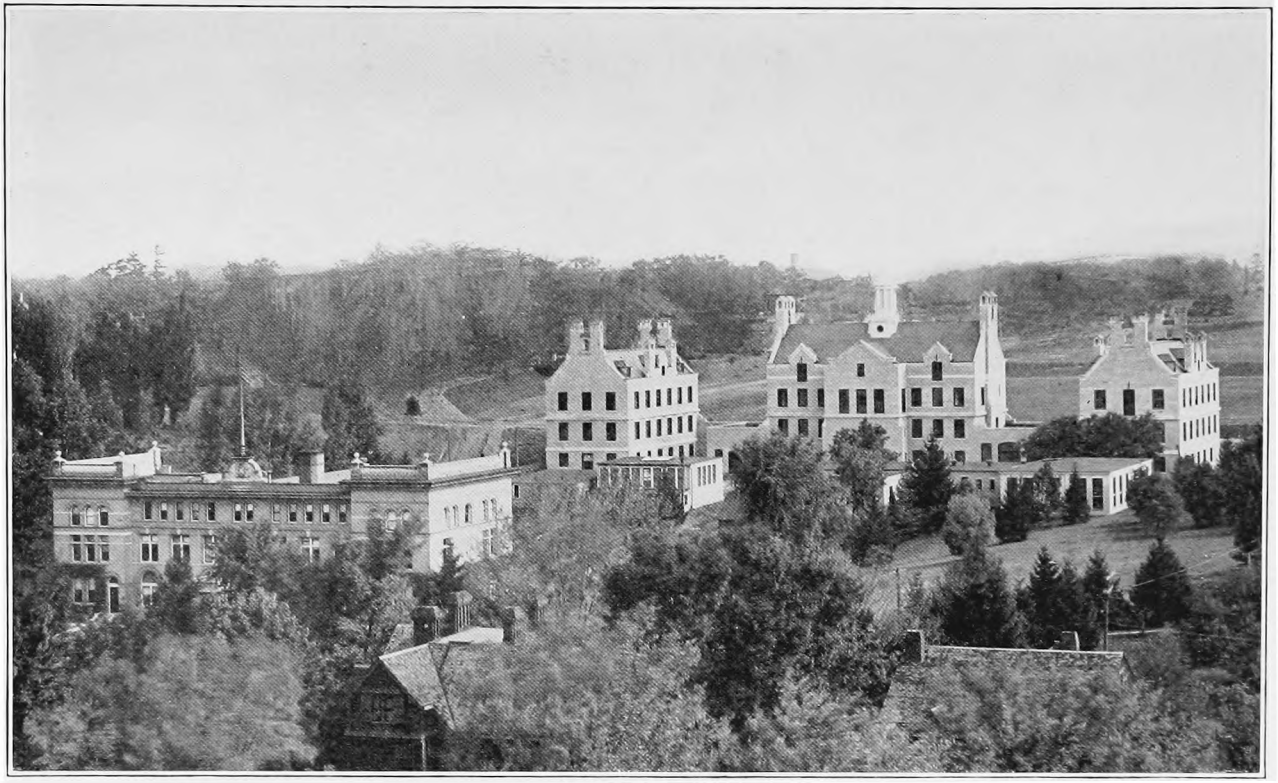
The Surgical Ward, 100 by 30 feet, and the Surgical Amphitheater, 40 by 60 feet, are of pressed brick and stone construction, one story high. The surgical ward contains box and other stalls for the Department of Surgery. The operating amphitheater is joined to the surgical ward on the south. It contains a well lighted operating room with necessary appliances, a drug and instrument room, and a recovery room into which animals may be moved from the operating table by means of an inclined plane.

The Post Mortem Building is a wooden structure with impermeable floors; it is well lighted and is adapted to post mortem demonstrations. It contains also a room for instruments and for microscopic diagnosis.

In addition to the above buildings there is a cottage for the groom, situated south of the main building.

Besides the buildings on the Campus, there is an experimental farm of 100 acres about two miles from the college. On it are barns for animals under

experiment, a modern and sanitary hog house, a laboratory for the manufacture of anti-hog-cholera serum, a modern barn devoted to experimental work in diseases of breeding animals, and several small isolation sheds. The farm forms a very important part of the college because it enables the college to carry on investigations on a much larger scale than would be possible without it.



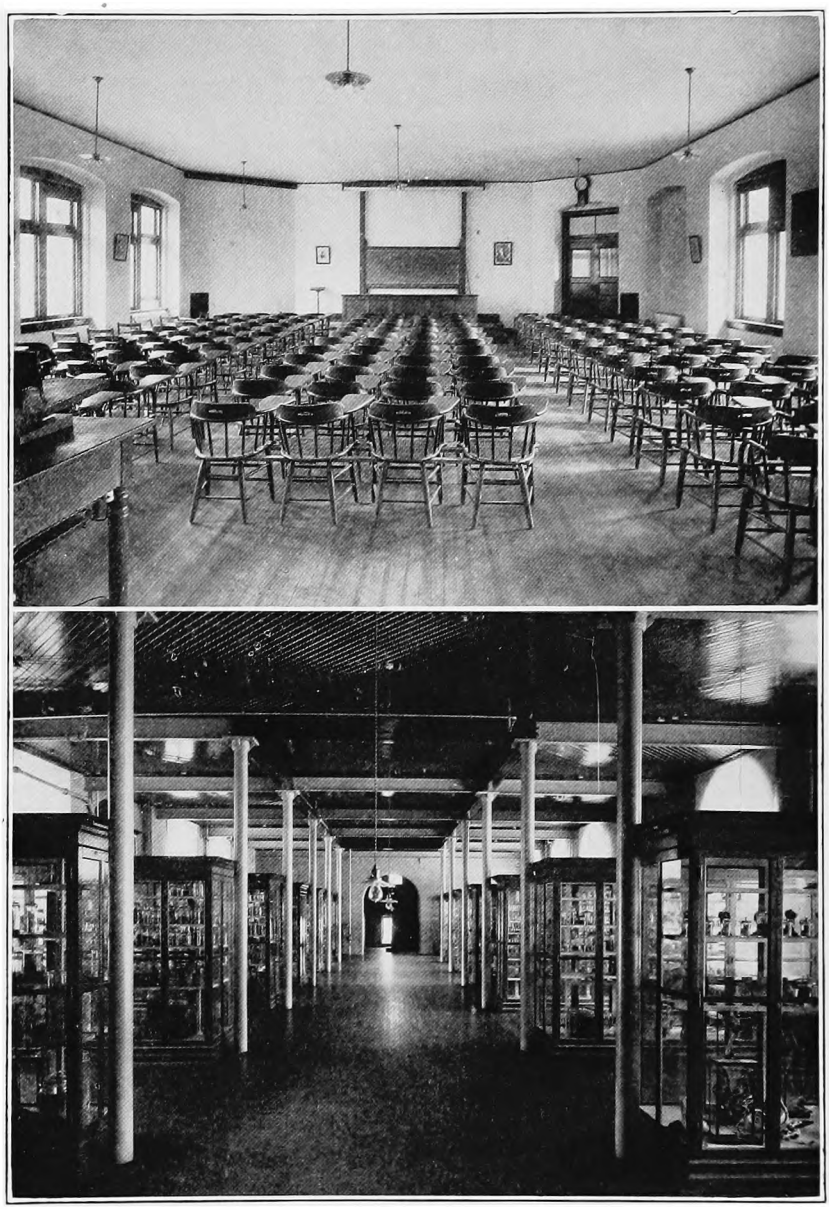
Main Building Small Animal Hospital Post Mortem Room Hospital and Clinic for Medicine Surgical Hospital Farriery

BUILDINGS OF THE NEW YORK STATE VETERINARY COLLEGE

JAMES LAW HALL

THE FARRIERY MEDICAL BUILDING SMALL ANIMAL BUILDING

BUILDINGS AT EXPERIMENT STATION

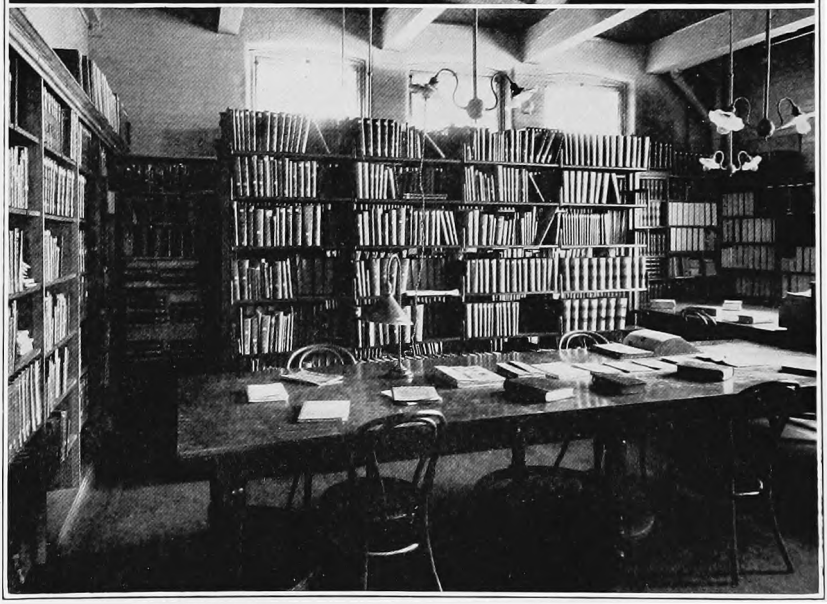


Lecture Room

This room is used by the Departments of Physiology and Anatomy. It is also used as an assembly room for meetings of societies, the annual Veterinary Conference, and student activities.

Museum

The central part of the first floor of James Law Hall was set aside for a museum. It affords space for sixteen large cases. It contains valuable and instructive exhibits in comparative anatomy, physiology, pathology, medicine and surgery that are of much interest to animal owners. In addition, the several departments have other collections that are used for teaching purposes.

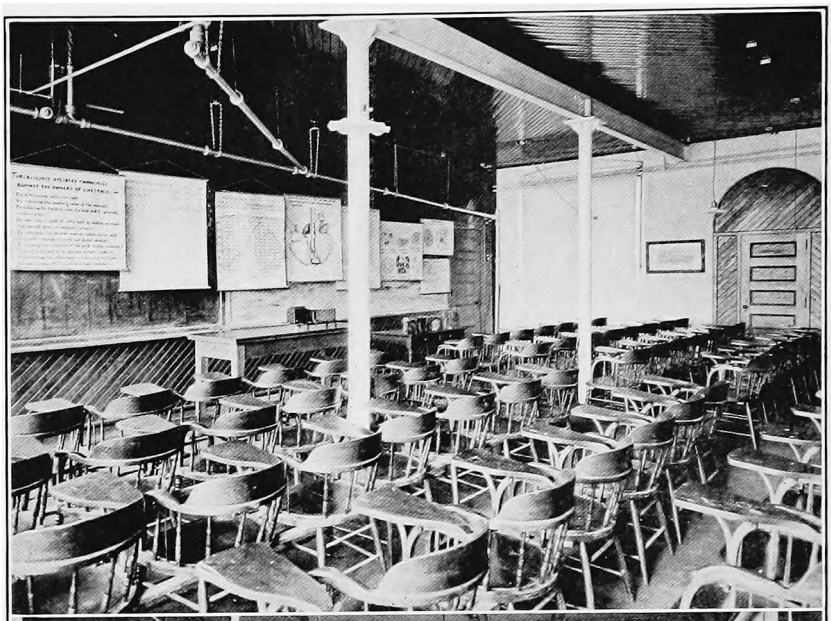


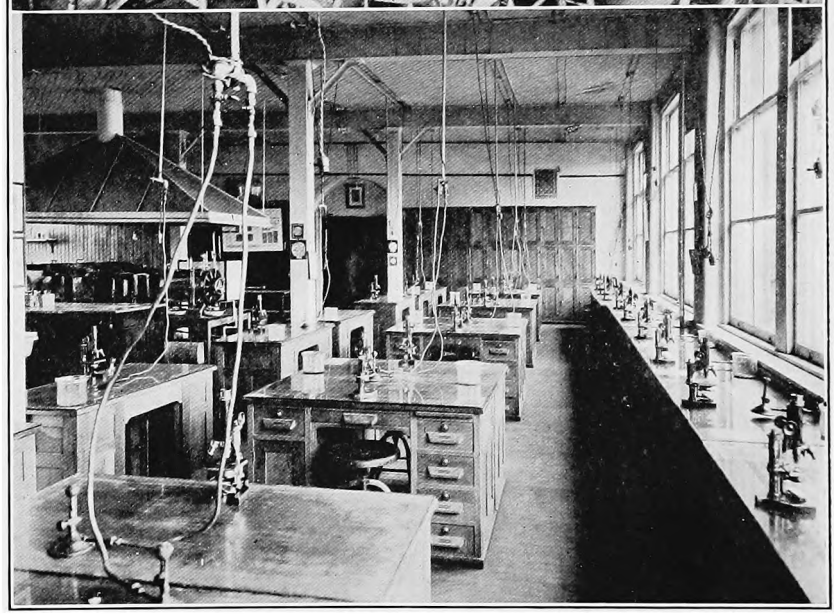
The Periodical Room

In the periodical room may be found the one hundred and more periodicals which come to the library by subscription or gift. They are in the field of veterinary medicine and the allied sciences and represent the work done in many lands. The collection includes periodicals in six languages.

Library

The library contains nearly six thousand volumes on anatomy, physiology, materia medica, bacteriology, pathology, hygiene, chemistry, surgery, horseshoeing and other associated subjects. These books are obtained by purchase and gift. They are scientifically catalogued. The library contains also a periodical index, the index-catalogue of the Surgeon General's Library, the A. M. A. Cumulative Index, the Index Medicus and other means of reference.



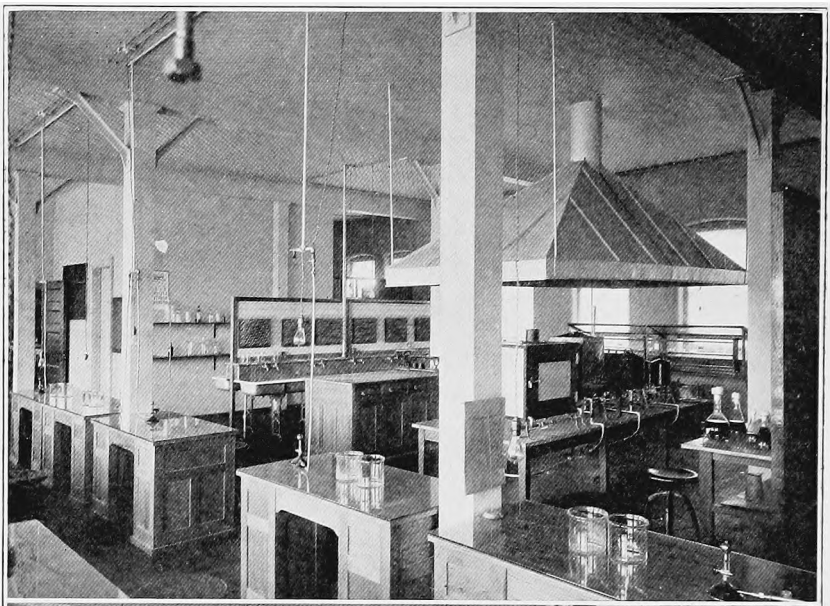


Lecture Room

This lecture room is used for pathology, bacteriology, meat inspection, parasitology, and physiology. The illustration shows it prepared for a lecture on tuberculosis.

Bacteriological Laboratory

This illustrates the desks and lockers. The laboratory accommodates thirty students, each having an individual desk, microscope, and incubator space. This laboratory is used also for the microscopic work in pathology and parasitology.



Bacteriological Laboratory

This shows the arrangement of the sterilizers, work tables and sink for cleaning glass ware. At the end there is an incubator room containing two compartment incubators providing individual space for forty-eight students each, also two incubators of usual type for research and diagnosis work. The incubator room for the manufacture of tuberculin, cabinet for the storing of culture media, reference library and janitor's room are not shown.

Pathological Laboratory

This shows a part of the pathological museum and laboratory for the study of gross pathology. It contains about eighteen hundred selected specimens illustrating the morbid anatomy of various sporadic and infectious diseases of domesticated animals. The fresh material is studied in the autopsy room, which is in another building not shown in these illustrations.

DEPARTMENT OF ANATOMY

Upper Laboratory

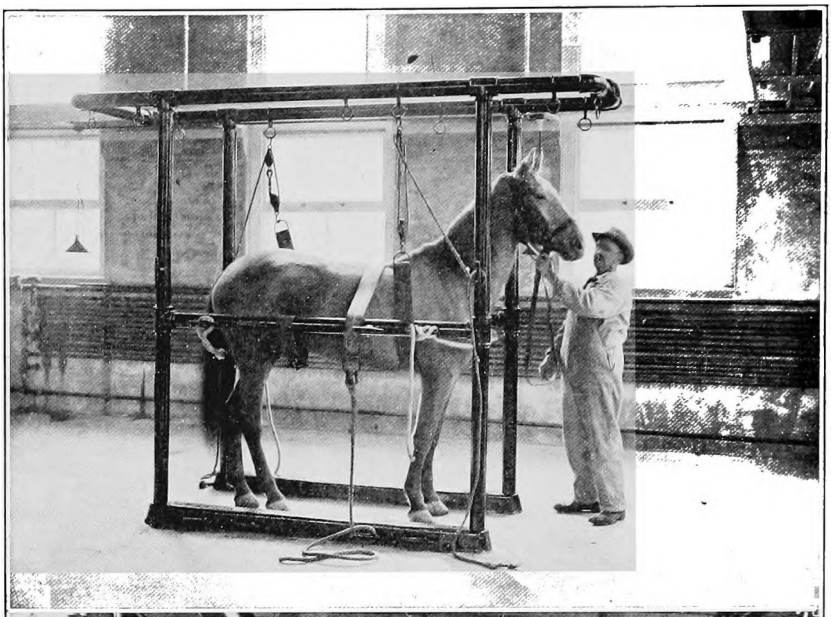
The department of anatomy occupies the north wing of the main building. There is one large laboratory and several smaller rooms on each of the two floors of this wing.

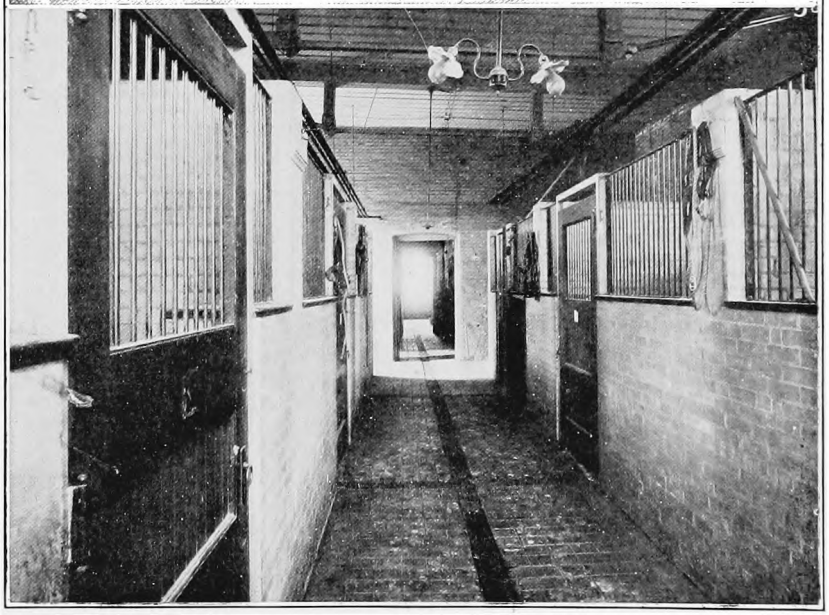
The upper anatomical laboratory is 37 x 50. It is exceptionally well lighted by large windows on three sides of the room. The lecture room is shown in plate 5.

An osteological room 16 x 18 and a private laboratory of the same size are also located on the second floor.

Lower Laboratory

The lower anatomical laboratory is 37 x 54 in dimension. Communicating with this laboratory are several smaller rooms used as recitation and demonstration, office, embalming, locker, and preparation rooms respectively.



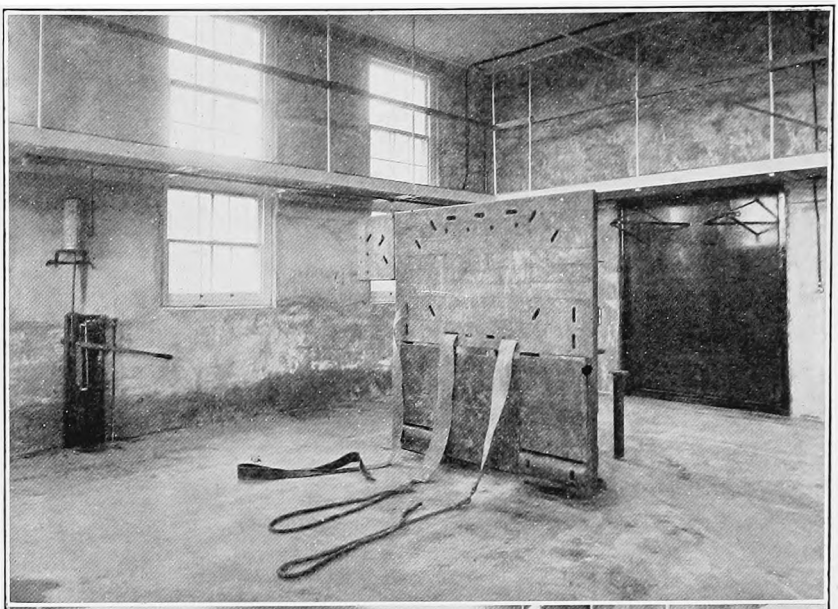


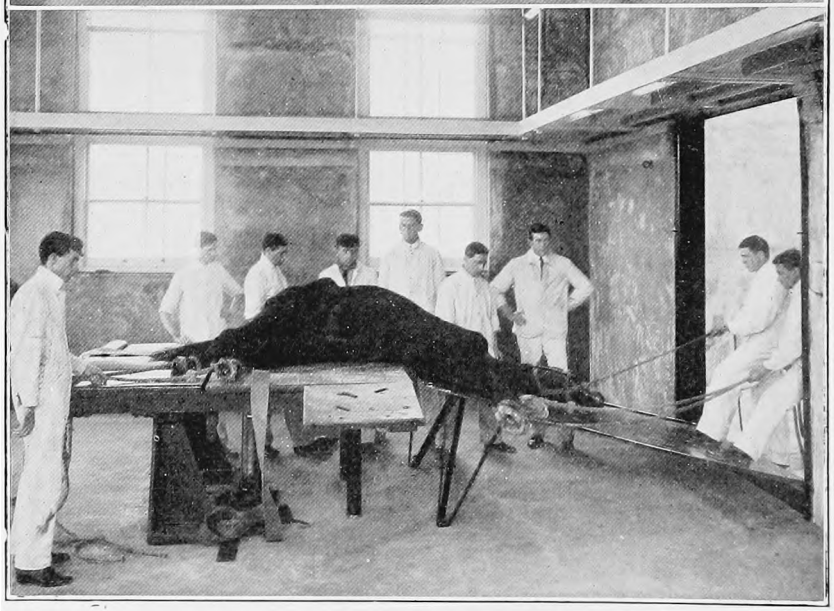
Operating Room

A section of the operating room showing a horse confined in the metal stocks. These stocks are constructed of iron pipe so that they may be easily cleaned and disinfected and still be strong and firm.

Surgical Ward

A ward in the surgical hospital with large roomy box stalls and gratings to allow the free circulation of air. The temperature of these stalls is regulated by means of hot water heat and the ventilation is cared for by properly arranged ventilators.



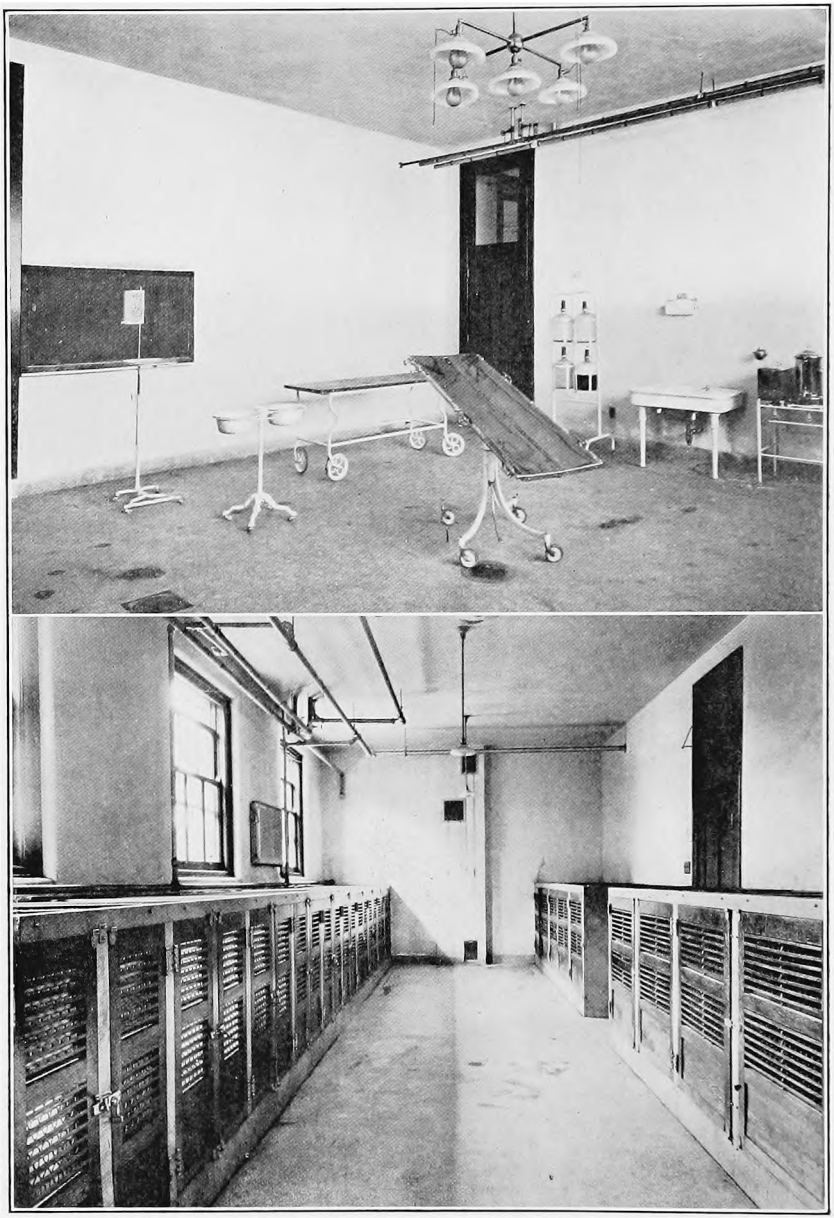


Operating Table

The illustration shows the operating table in upright position. also the heavy steel door which when lowered acts as a slide into the recovery stall. The hand pump has since been replaced by an electric pump to hasten the action of the table.

Operating Table

This is another view of the operating table in horizontal position. The anaesthetized horse is lying in position to allow the mucus to drain from the lungs and is about to be slid into the recovery room. The recovery stall is a large, well lighted and ventilated room where the patient is allowed to lie on a canvas padded floor until fully recovered from the anesthetic.

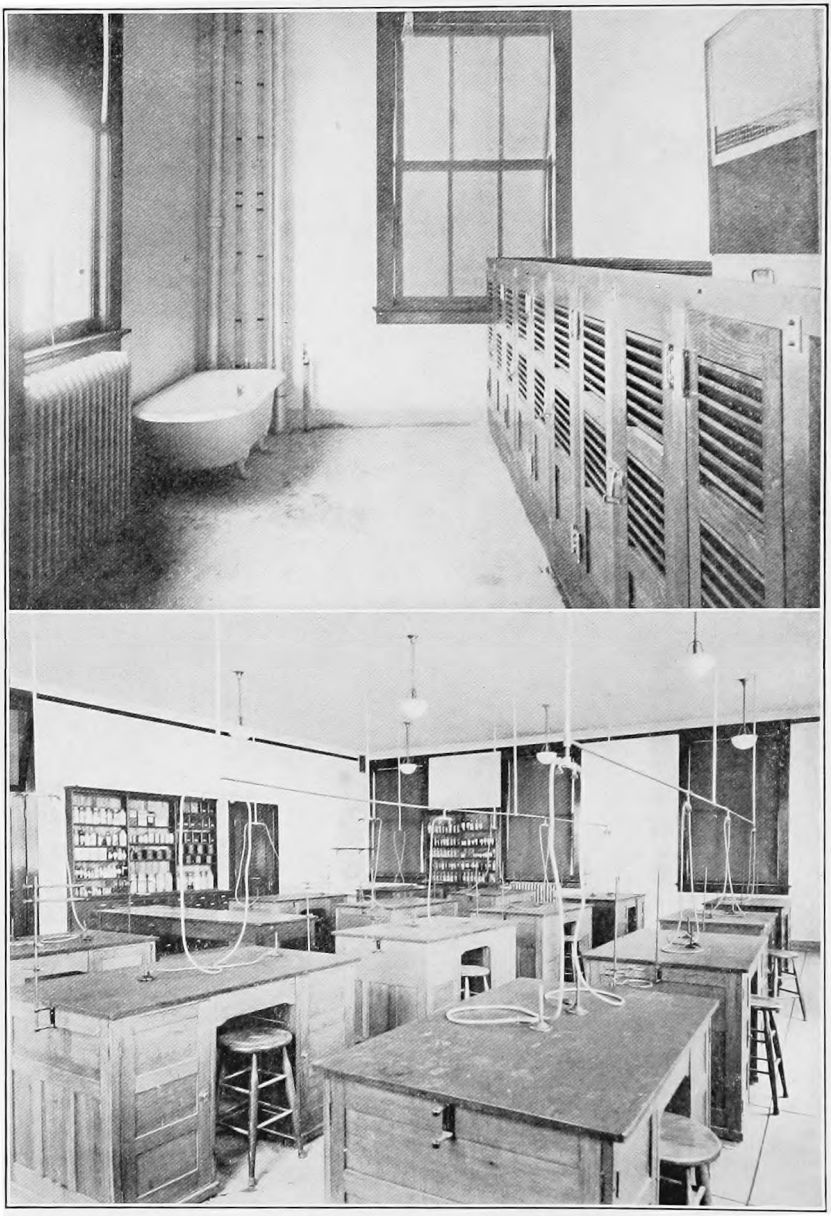


Operating Room

The illustration shows the operating room for small animals. Adjoining it is the drug and instrument room. All operations are performed according to modern surgical procedure and, with the exception of very minor ones, under complete anesthesia. Students assist in the operations and in the care of the patients.

General Ward

This ward contains twenty-two kennels. They are constructed of iron with marble partitions and trimmings and raised slat floors over drains. This ward is used for surgical and sporadic medical diseases.

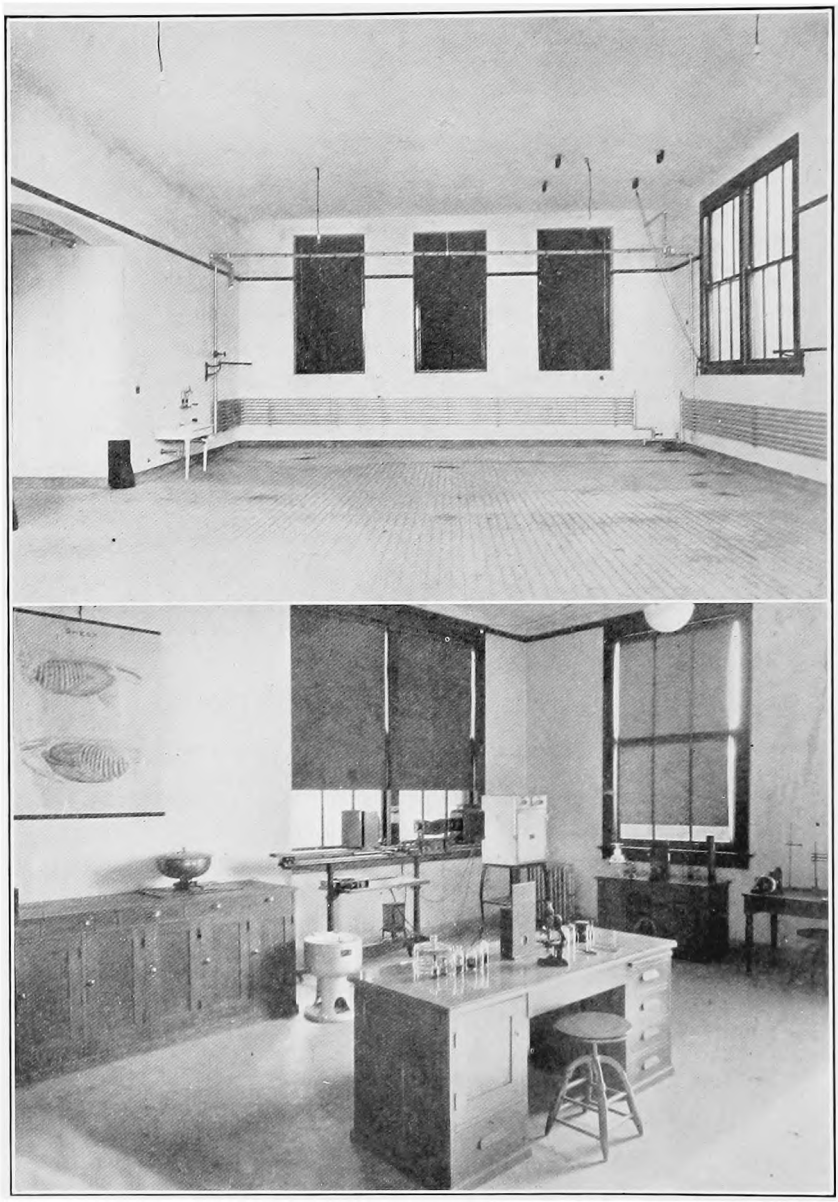


Isolation Ward

The isolation ward contains five kennels of similar construction to those of the general ward. The room is entirely separate from the rest of the building, the only entrance being from the outside. It is used as a contagious ward. There are three other wards of similar size, one being used for mange and the others for quarantine.

Materia Medica and Pharmacy Laboratory

This laboratory is upon the second floor of the small animal building. The illustration shows the desks used by the students in materia medica and pharmacy. The laboratory will accommodate 48 students, each having a locker in which to keep the apparatus assigned to him. Adjoining this room is the department museum containing a valuable collection of drugs and the larger pieces of apparatus.

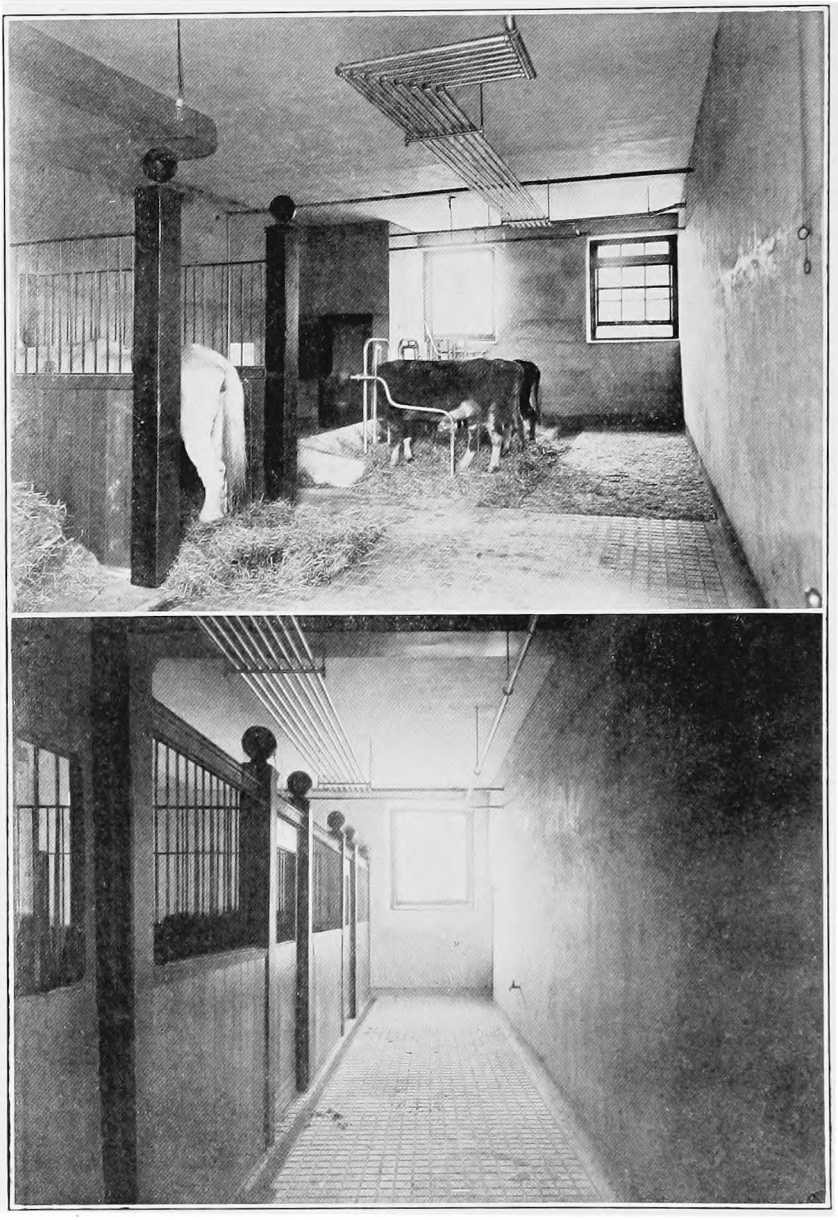


Medical Clinic

This room is situated on the first floor of the Medical Building. Adjoining it are a drug and instrument room and operating room with stocks. Classes in physical diagnosis, ophthalmology, and hygiene are held in this hall.

Medical Laboratory

This laboratory is completely equipped for bacteriological and other diagnostic work. Here are conducted the sputum tests for tuberculosis by animal inoculation, preparation of autogenous bacterins for use in the ambulatory clinic, and research work in the department of medicine.



Cattle Ward

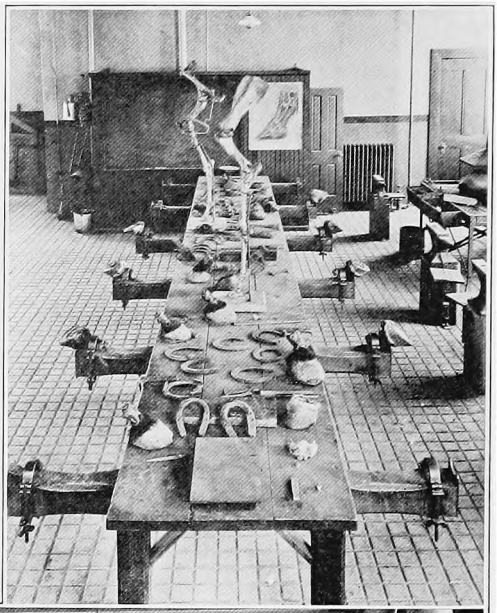
The illustration shows single stalls and a row of various types of improved sanitary cow stalls. This equipment affords material for teaching the subject of the construction of dairy barns as given in the course in hygiene.

Isolation Ward

This includes single and box stalls for the isolation of cases of infectious diseases.

Lecture Room

The illustration shows a lecture room with a full equipment for the teaching of theoretical horseshoeing. It is located on the second floor of the Farriery building.

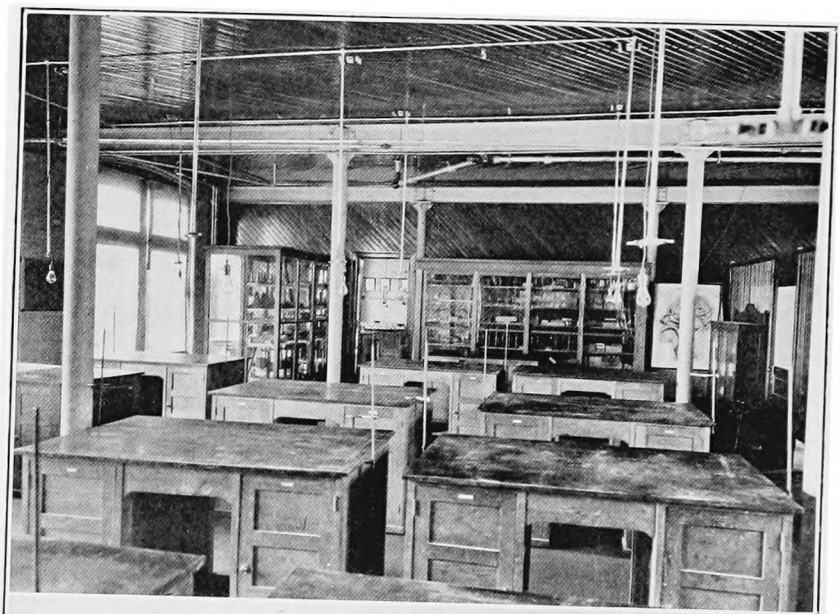


Laboratory Table

This picture shows a table equipped with twelve vises to hold the feet of horses for laboratory work. It is used to teach and demonstrate trimming and leveling of the hoof and the fitting of shoes. It is located on the first floor of the building in the same room as the forges.

Shoeing Floor

This is an illustration of one-half of the shoeing floor. This room is equipped as an up-to-date shoeing shop. It contains eight forges. Practical shoeing is demonstrated in this room.



DEPARTMENTS OF PHYSIOLOGY AND OBSTETRICS

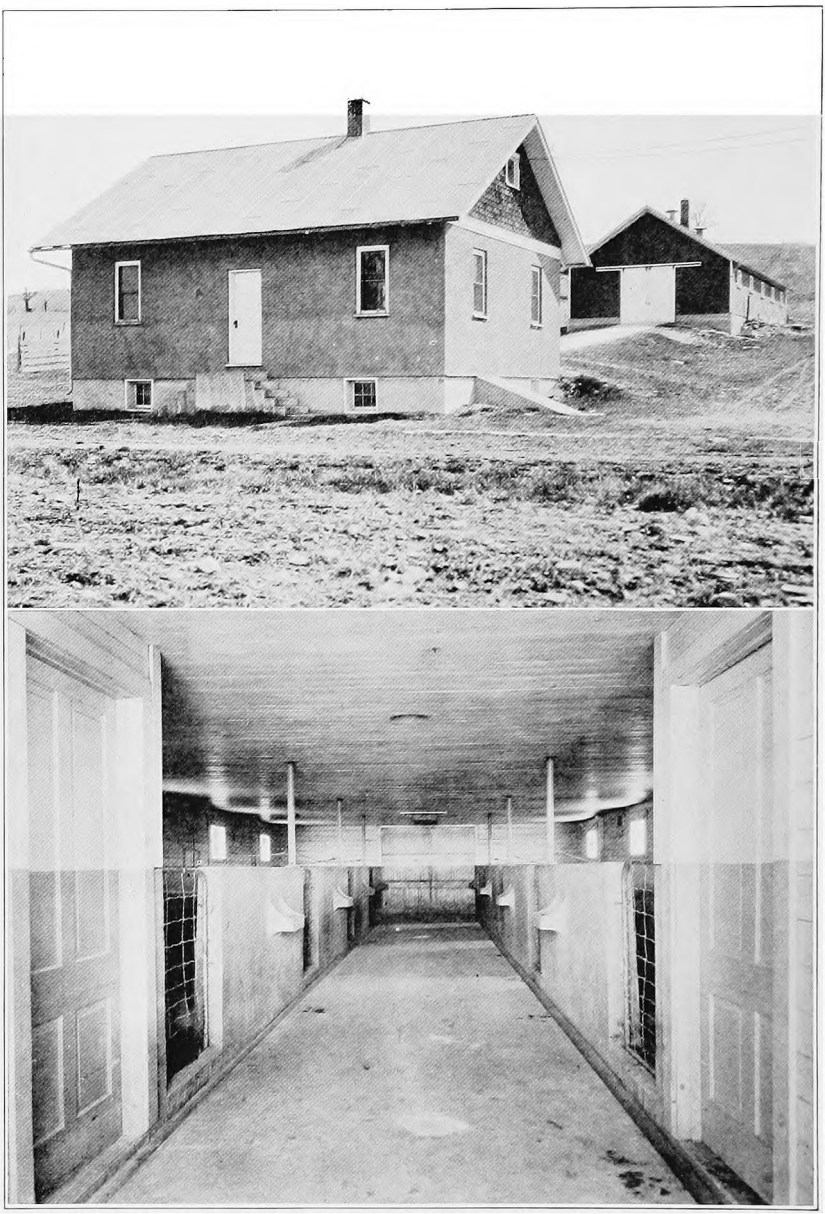
Physiology Laboratory

The department of physiology has commodious quarters. The offices are located on the first floor of the main building. The laboratories for urine analysis, chemical and experimental physiology occupy the greater part of the second floor of the same building. The laboratories are fully supplied with ordinary apparatus and many special pieces for complete and satisfactory work in physiology and urine analysis.

DEPARTMENT OF OBSTETRICS AND RESEARCH IN THE DISEASES OF BREEDING CATTLE

The Equipment

An essential part of the research in the diseases interfering with reproduction in cattle (sterility, abortion, premature birth, retained afterbirth, calf scours, calf pneumonia, etc., etc.) is conducted in this building. It provides 20 isolated box stalls for adult cattle. An extension not shown in the illustration provides stalls for 10 calves.



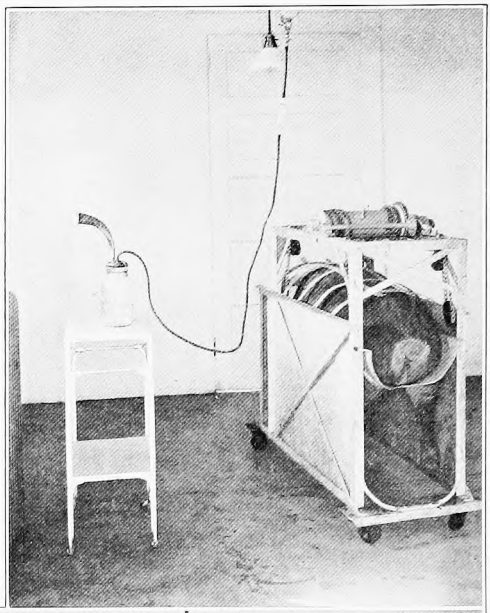
VETERINARY EXPERIMENT STATION

Serum Laboratory and Hog House

This laboratory offers facilities for supplying the New York State demand for a thoroughly tested and reliable anti-hog-cholera serum. This demand has increased steadily until the value of the protection serum afforded New York State's swine industry must be expressed in tens of thousands of dollars annually.

Interior View of Hog House

It is in this building that the hogs used in preparing anti-hog-cholera serum are quartered. The floors, partitions and troughs are of concrete, and the doors are of steel. The entire building was planned with a view to durability, convenience, and sanitary perfection.



VETERINARY EXPERIMENT STATION

Bleeding Room

Showing equipment for drawing the blood used in preparing anti-hog-cholera serum, and the clean surroundings in which the work is done. The hogs are bled from their tails with the vacuum apparatus shown in the illustration. This apparatus reduces to a minimum possibilities for contaminating the blood, and greatly facilitates the process of bleeding.

Serum Room

Equipped for handling the blood of serum hogs, and converting it into the finished product—anti-hog-cholera serum. A sterilizer, not shown in the illustration, is a part of the equipment of this room, and all things that come in contact with the serum—bottles, corks, funnels, gauze, and graduates—are rendered sterile before being used.

SUPPLEMENT

THE PRESENTATION OF DEAN MOORE'S PORTRAIT TO CORNELL UNIVERSITY

By R. R. Birch*

A memorable incident occurred during the Veterinary Conference or Forum held in connection with the Celebration of Cornell's Semi-Centennial. This was the presentation to the University, by its veterinary alumni, of an oil portrait of Dean Moore.

While the regular program was in progress, President Schurman entered, and, according to plan, his appearance was the signal for a momentary halt in the afternoon's exercises. Dr. Gannett, who was presiding, announced that Dr. Cassius Way, president of the Veterinary Alumni Association, had a few remarks to make, and, as Dr. Way took the floor, the portrait was carried into the room and placed on an easel. Dr. Way, on behalf of the Veterinary College alumni, who had caused the portrait to be painted, presented it to the University in the following words:

"It is a great pleasure for us, as alumni, to be present today at this celebration on the fiftieth anniversary of the founding of Cornell University which, by the way, is the fiftieth anniversary of the beginning of better veterinary education in America, for it was through the broad vision of Ezra Cornell that the foundation for the work of this college was laid.

"It is a singular honor for us to present to the University, through our president, a portrait of our esteemed director, who occupies a unique place in the realm of science. Those who know him in this field admire and respect his ability, while those of us who are fortunate enough to know him as a teacher have learned to love him.

"In the field of veterinary medicine he occupies a pinnacle. At this time, he has the honor of being the president of our American Veterinary Medical Association, the greatest organization of veterinarians in the world. He was recently honored with an honorary degree from one of our great sister institutions, Syracuse University.

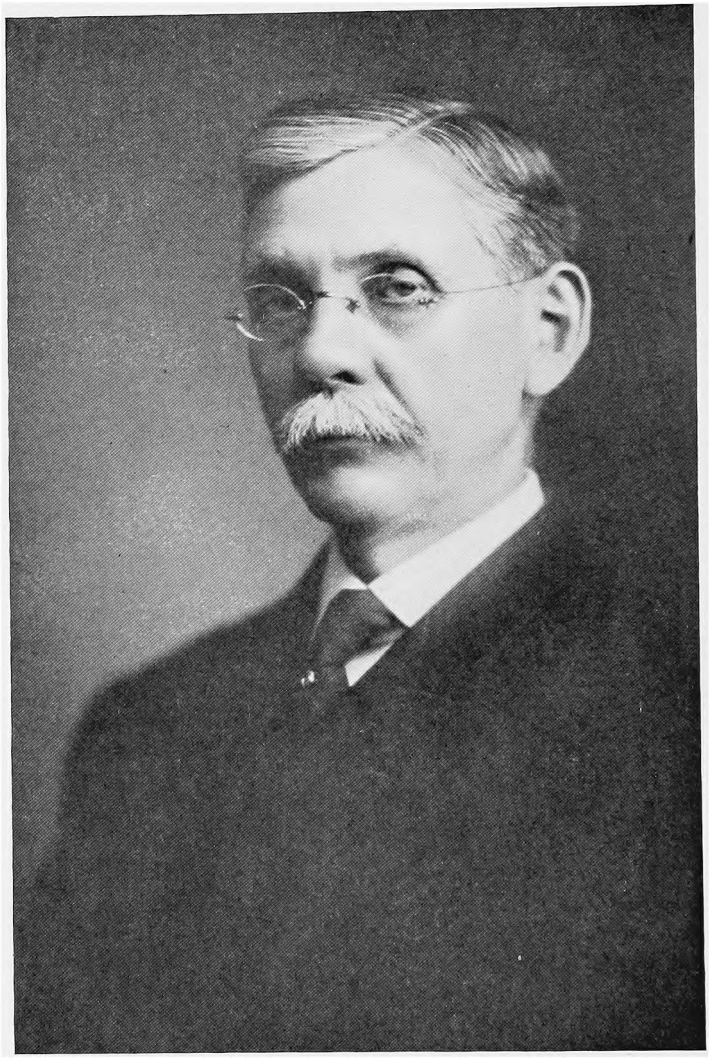
"The University, and especially this college, has been fortunate all these years in having the guidance and association of Professor Moore, and we trust that we may have his guidance and his counsels for many, many years. We have come to know him as the thorough scientist, the great teacher and the true friend.

"Mr. President, on behalf of the alumni of this college I have the great honor to present to Cornell University a portrait of our beloved Director, Veranus Alva Moore."

President Schurman said:

"It is a great pleasure, on behalf of the University, to accept this portrait of Dr. Moore, Director of this College, which the alumni have presented. I deem it

* The entire committee consisted of R. R. Birch, chairman; H. R. Ryder, F. W. Andrews, C. L. Roadhouse, J. F. Shigley, and R. W. Gannett.



DEAN MOORE

a great privilege and find it a great satisfaction to be present on this occasion. I did not wish to miss this, because I have come to entertain a great friendship and a very great affection for Dr. Moore. We have worked together in great harmony. I should be very sorry if such a piece of great good fortune should come to him and I not be here to share it. These are not things we usually say to one another. Men do not wear their hearts on their sleeves. It is not easy for me to speak of the great esteem in which I hold Dr. Moore, for it is not only regard and esteem, but the deepest friendship I feel for him.

"I have the honor to represent the University in which he represents one of the colleges. I regard Dr. Moore as one of the great educators in the University. I do not believe that there is a man anywhere in this University who has wiser and sounder ideas on education. While he belongs to you alumni, he also belongs to the University as a whole, as a co-worker and a co-educator. I place very great value upon the views of Dr. Moore on every question of university policy. That shows his standing in this University. You know what he has been to you. As the chairman of the committee said in presenting this portrait, he is a leader.

"When we lost, through retirement, one of the most eminent men in veterinary science (whom I see here and who we all hope will be spared for very many years to us), I remember I felt how hard it would be to find a man who would fill that very large place. Dr. Moore has filled that place. No one realizes that more than his great predecessor. It has been the good fortune of the University that it has had such great directors for this college.

"There are certain qualities which must be possessed by a man at the head of a college. The director must be a gentleman. That goes without saying. He must have tact, he must have sympathy. You know through these years how Director Moore has succeeded so conspicuously in fulfilling these requirements.

"I do not know whether you know how large a work he has done in presenting the work of this college to the leaders at Albany and elsewhere. There is no man I know in the State, dealing with the Legislature, who enjoys their confidence more fully and who has more influence with them. That is because there is a perfectly frank and honest precedure. He puts all the cards on the table and never asks for more than he feels the college needs and can use wisely. The chairman of one of the most important committees in the Legislature said to me, in reference to the Veterinary College, 'It is the most economical institution in the State of New York.'

"I am glad to be with you, my young friends of the Veterinary College, on this splendid day. You are not waiting until Dr. Moore is old, but while he is in the full flush of his powers you have chosen to honor him. On behalf of the University I wish to express to you my appreciation of the fine sentiment that has animated you in this worthy enterprise."

Dr. Moore said:

"There are times when it is difficult, if not impossible, to find words to express adequately one's feelings. I find myself in such a situation now. Had I known, I fear I would not have advocated the conference so persistently. If this has been planned to surprise me and incidentally to embarrass me temporarily, it has been a great success. If it is a reminder that the chloroform stage is approaching, I will tell you that it is already here. If, however, it has been to assure us of your

loyalty to the teachings of this college and the things for which it stands, it is most gratifying and confirms the opinion I have held for many years.

"I have felt for a long time that the alumni were true to the principles upon which this college was established. I believe that ultimately they will triumph. I believe that the time will come when there will be a veterinary profession in this country that will stand second to none, in its loyalty to truth and devotion to service. But meantime it seems that the sum of our duty is to fight for the cause we have honestly in hand and with the weapons that we ourselves have forged. That is being done in New York State. Dr. Law, the father of scientific veterinary education in America, and who is with us to-day, can testify to fifty years of endeavor with the men who received their inspiration from him, and also of the advances that have been made.

"The progress that the college has made has been due to the hard work and coöperation of the faculty and the standards your professional services have created. With the many forces that are tending to make a better veterinary profession, one man can do but little. The credit belongs to all.

"I would not be human if I did not feel deeply this expression of friendship. I assure you I appreciate it and thank you one and all."