

# THE INSTITUTE REPORT



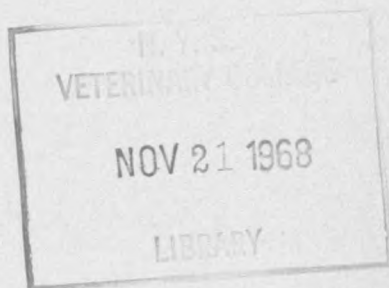
From the  
VETERINARY VIRUS RESEARCH INSTITUTE  
Cornell University, Ithaca, New York

September, 1968

Volume 18



# THE INSTITUTE REPORT



From the  
CORNELL RESEARCH LABORATORY  
FOR DISEASES OF DOGS  
Cornell University, Ithaca, New York

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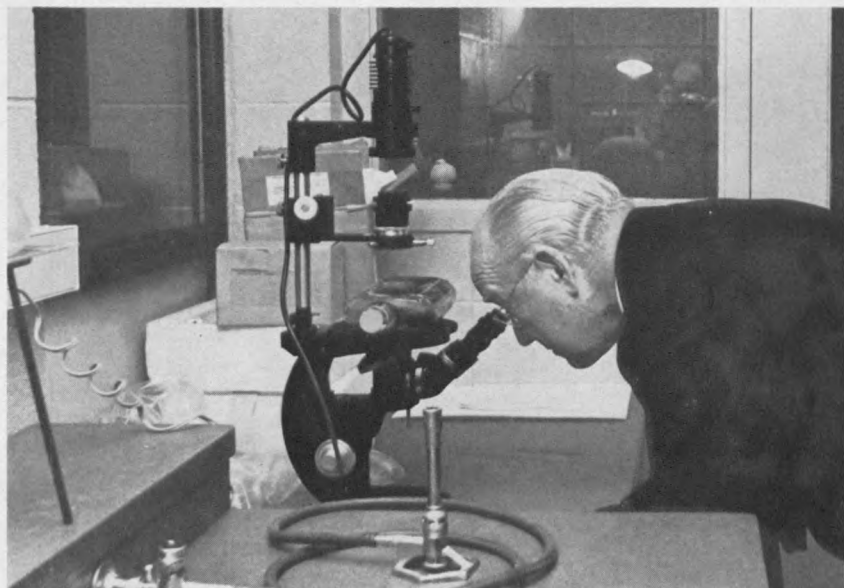


## MESSAGE FROM THE DIRECTOR

**A**N important step in development of the Veterinary Virus Research Institute and of the Cornell Research Laboratory for Diseases of Dogs occurred during the spring of this year with completion of a new laboratory building, provided, furnished, and equipped by funds from the National Institutes of Health and by contributions made to Cornell University for this purpose by donors interested in work of the Institute.

Members of the Finger Lakes Kennel Club were the first visitors to be shown through the new laboratories, and this seemed most appropriate, because Finger Lakes was the first club ever to support the Cornell Research Laboratory for Diseases of Dogs, and it has continued this help faithfully each year.

On April 16, 1968, Cornell President James A. Perkins presided as host of an official luncheon attended by individuals interested in the new laboratory. These included Cornell trustees John M. Olin and Spencer T. Olin, Dr. Oswald R. Jones of New York and Dr. David A. Blumenstock of Cooperstown, as well as representative guests from the National Institutes of Health, the Office of Naval Research, other federal and state agencies, from industrial and commercial companies, the American Veterinary Medical Association, the American Kennel Club, the Westminster Kennel Club, Gaines Dog Research Center, Tompkins County SPCA, Cornell University, the New York State Veterinary College, and the staff of the Veterinary Virus Research Institute.



*Mr. John Olin viewing flasks of tissue culture with new inverted microscope of recent design.*

At the opening ceremony of the new laboratories, President Perkins reviewed origins of the Institute, including the Research Laboratory for Diseases of Dogs, and commented upon its progress. He stated that the beginning in 1950 was modest and consisted of two professors who worked part-time on research, a graduate student, and a technical staff of three, with an annual operating budget of \$27,000. Of primary importance was a building constructed at that time for the Cornell Research Laboratory for Diseases of Dogs. This original building had two main sections for workers, the Daynemouth Division, given by the late Colonel and Mrs. Lee Garnett Day, and the Giralda Division, given by Mrs. Geraldine Rockefeller Dodge. Each division had a laboratory and an office. The remainder consisted of carefully designed individual units, allowing uncontaminated work with viral and other infectious diseases. Through the years, with additional workers and students, the offices were converted into small additional laboratories, and several workers were crowded together. This was not a satisfactory arrangement for controlled work with infectious organisms, and there was no space for much-needed modern technical equipment. Now, with completion of the new building, the Daynemouth and Giralda Divisions have been restored to their former effective design of two laboratories and offices, and is supplemented by the new building which contains six laboratories and offices in addition to special rooms for equipment. Laboratories designed for studies in parasitology and in biochemistry have been added.

The Institute staff now consists of 48 persons, including six full-time research professors, four graduate assistants, and five consultant professors. Costs through the years, of course, have increased correspondingly. Because the Cornell Research Laboratory for Diseases of Dogs is supported entirely from funds provided by those interested in the welfare of dogs and in the development of basic and fundamental knowledge concerning infectious diseases, immunology, and other factors that influence health, growth of the Institute has been controlled by the amount of support available. Fortunately, individual contributors not only have grown in number but also have increased their contributions and remained steadfast.

In the beginning, there were no philanthropic foundations interested in supporting the Institute. Now there are 22, as can be seen in Acknowledgments. And of noteworthy significance has been the growing support from kennel and breed clubs. The Cornell Research Laboratory for Diseases of Dogs was built at the request of and for the benefit of dog owners throughout the world; as a general rule, many of these individuals belong to kennel clubs.



The thought often has been expressed that contributions from kennel clubs alone could support an excellent research program, if only each kennel club were to assume a responsibility to contribute in keeping with its membership, either together as a club or as individuals. From the very beginning, the doctors of veterinary medicine have supported the Institute, and, in addition many medical men and scientists have done so.

In a continuation of his speech, President Perkins summarized accomplishments of the Institute in education by spreading knowledge through graduate students and post-graduate scholars from this country and from foreign countries. Eight students have been awarded the M.S. degree and 17 have received the Ph.D. degree, with majors in virology, while 14 post-graduate students have been sent here on fellowships in order to improve their own educational and scientific background. There have been 226 technical papers published by workers of this Institute since it began operation; the knowledge gained through this research has been of value to help the health of dogs, either by vaccines or procedures concerning immunology and of nutrition, management, and housing.

A brief mention will be made of some of the work now in progress in order to indicate its scope and diversity.

Better understanding was obtained of the protection given puppies by measles vaccine after basic knowledge was gained through fluorescent antibody studies on the gradual spread of distemper virus throughout the body. Spread of the natural virulent disease was compared to that following a vaccination with heterotypic measles vaccine. The measles vaccine was found to accelerate production of antibody which was effective against virulent distemper virus, and in so doing, the accelerated antibody destroyed distemper virus in the puppy's body before it could cause illness. The thymus, now known to be important in general resistance to disease of the young, remained normal in puppies protected by measles vaccine, although it was completely destroyed in dogs that had natural distemper, and this seemed to lead to either death or long chronic illness.

When work began in the Cornell Research Laboratory for Diseases of Dogs in 1950, only two viral diseases of dogs were commonly recognized: Distemper and rabies. Now we know of six: distemper, rabies, hepatitis, parainfluenza virus (SV5), herpesvirus, and reovirus. Studies have been made of all of these diseases in order to evaluate their effects upon the health of dogs. Are any of them, especially SV5, important in the annoying syndrome of kennel cough? Would vaccination be worthwhile?

Canine brucellosis, caused not by a virus but a bacterium, has been recognized as widespread in certain breeds, and now has been found in 38 states. No breeds are immune. How many dogs are endangered? Because other species of *Brucella* can infect man, is there a human hazard to dog owners and those who handle dogs? Can dogs be immunized by vaccination, and, in conjunction with blood tests, can this dangerous organism be eliminated? Brucellosis in dogs has become so important that the Federal Bureau concerned with brucellosis has assigned a member of its staff to participate in the work here.

Dog nutrition is in a high state of perfection, but do we know all that needs to be known? Studies have shown that at least two vitamins can affect the antibody formation necessary to overcome distemper virus or other infections. In addition, is the quantity of caloric intake or the quality of the food ingested mainly responsible for good health and vigorous performance? Also, can formation of bone and development of teeth be influenced by nutrition? These problems have received preliminary studies, but now can be expanded with the new facilities and equipment available.

Parasites are being studied in the enlarged program. Dogs have coccidiosis, a protozoan disease considered by some workers to be of minor importance, but by others to be a significant health problem. Coccidiosis is of common occurrence in dogs; it rarely kills, but causes noticeable and unpleasant effects, among which is diarrhea. In addition to loss of weight and unthriftiness, diarrhea in a house pet is worthy of attention, especially if severe and prolonged, even though death does not occur.

Dogs that develop physical defects now will receive much attention. Although defects are of major importance, they are not studied easily because of the complexity of the problem. Factors to be considered are heredity, congenital or nutritional conditions, toxicities, and infectious diseases. A modern approach must be biochemical in order to produce a basis for control. Under the direction of a recent addition to the staff, a biochemist, working in the new, well equipped biochemical laboratory, studies have begun upon understanding such defects as completely as possible. Work has begun with hip dysplasia, which by many dog owners, is considered to be a most damaging defect whose solution is worthy of any effort.





*This equipment, called a lyophilizer, allows proteins, such as viruses, to be dried under high vacuum from the frozen state, to be stored for future use.*



*This recording spectrophotometer, which analyzes solutions for various materials, is essential for biochemical work.*



*The liquid scintillation counter, by analysis of radioactive tagged elements, makes possible metabolic studies of various nutrients.*

## IN APPRECIATION

In addition to annual operating expenses, which have increased not only because of rising costs but also because of an increased number of scientific problems and additions to the staff, there was during the past year an additional need for funds to help in building the new laboratories and properly to equip them. Of the total costs of \$423,000 for construction and \$137,000 for equipment, the National Institutes of Health provided \$174,200 with the remainder supplied by the Institute. A number of supporters of the Institute made additional contributions and we should like to acknowledge, with great appreciation, the generous support provided by: Mr. and Mrs. Gaylord Donnelley, Mrs. Marjean Elebash, Mrs. Helen H. Harrower, Mr. and Mrs. E. Roland Harriman, Mr. Carl Holmes, Mrs. Dorothy B. Howe, Mr. R. L. Ireland, Mr. and Mrs. R. L. Ireland, III, Mr. David Klee, Mr. and Mrs. George H. Love, General Richard King Mellon, Mr. James Moffett, Mr. John M. Olin, Mr. and Mrs. Spencer T. Olin, Mr. and Mrs. A. Wells Peck, Miss Margaret K. Quarrie, Mr. Edgar Monsanto Queeny, Mr. Robert Rauschenberg, Mrs. Vincent F. Wilcox, Jr., Mr. Robert Winthrop, and Mr. Robert W. Woodruff.

The American Kennel Club continued its support. Of special value was the advice and counsel given by the Research Committee of the American Kennel Club, which has proven of great help in operation of the Laboratory.

In addition, a special debt of gratitude is owed to Mrs. Virginia Woolley, whose time, advice, and financial help have made the offices and laboratories colorful and attractive.

## IN MEMORIAM

The Cornell Research Laboratory for Diseases of Dogs did not come about by accident but as a result of initiative on the part of people who felt that a permanent research center for dogs was necessary. Two of the originators of this idea were Colonel and Mrs. Lee Garnett Day of West Cornwall, Connecticut. They and Mrs. Geraldine Rockefeller Dodge contributed the first large sums of money to Cornell for construction of the original research laboratories for study of diseases of dogs. After work began, their advice and counsel were invaluable in subsequent development. There was no occasion on which Colonel Day, with experience gained in business and from service in three wars, did not find the time to help with the many problems connected with growth and development of the Institute, while, before her sudden death in October of 1964, Mrs. Day made many important suggestions from her viewpoint as a breeder of Great Danes, a participant in dog shows, and as a biologist with keen appreciation of scientific efforts. One of the highlights of each year was a visit from Colonel and Mrs. Lee Garnett Day. They knew each member of the staff personally and they showed intelligent and enthusiastic interest in work that was being done. The death of Colonel Day in May of this year was an irreplaceable loss to the Institute.

## ACKNOWLEDGMENTS

The Cornell Research Laboratory for Diseases of Dogs gratefully acknowledges the gifts received from our contributors from September 1, 1967 to September 1, 1968 in support of our research program.

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- (213) APPEL, MAX J. G.: Pathogenesis of Canine Distemper. To be submitted to the *Amer. Jour. Vet. Res.*, 1968.
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(These doctors of veterinary medicine, physicians, and scientists in various parts of the  
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