ANNUAL REPORT
NEW YORK STATE
VETERINARY COLLEGE
1972-73
Seventy-sixth
ANNUAL REPORT
(1972 – 1973)
New York State Veterinary College
Cornell University
Ithaca, New York

Robert F. Kahrs, D.V.M., M.S., Ph.D.
Editor

The Veterinary College is a Statutory College of
The State University of New York
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October 30, 1973

The Board of Trustees of Cornell University
The President and Board of Trustees of the
State University of New York
The Governor of the State of New York

Sirs:

I have the honor to submit, on behalf of Cornell University, the report of the New York State Veterinary College for the year beginning July 1, 1972, and ending June 30, 1973. This report is submitted in accordance with requirements of Section 5711 of Article 115 of the State Education Law.

Respectfully,

Dale R. Corson
President
October 30, 1973

President Dale R. Corson
300 Day Hall
Cornell University

Dear President Corson:

Pursuant to the requirements of the Laws of New York State, I present herewith a report of the activities and accomplishments of the faculty and staff of the New York State Veterinary College for the year ending June 30, 1973, this being the 76th annual report of this College.

Respectfully submitted,

George C. Poppinsiek
COLLEGE ADMINISTRATION

George C. Poppensiek, Dean of the Veterinary College.
Kenneth McEntee, Associate Dean for Clinical Studies.
Charles G. Rickard, Associate Dean for Pre-Clinical Studies.
Robert K. Radziwon, Assistant to the Dean.
Ann Marcham, Director of Fiscal and Personnel Affairs.
William H. Johndrew, Director of Student Administration.
Howard E. Evans, Secretary of the College.

FACULTY

Appel, Max J. G., Associate Professor of Veterinary Virology.
Arion, William J., Assistant Professor of Physiological Chemistry.
Aronson, Arthur L., Professor of Veterinary Pharmacology.
Baker, James A., Professor of Veterinary Virology and Director of the Veterinary Virus Research Institute.
Bentinck-Smith, John, Professor of Clinical Pathology.
Bergman, Emmett N., Professor of Veterinary Physiology.
Bistner, Stephen I., Associate Professor of Comparative Ophthalmology.
Bolton, Gary R., Assistant Professor of Small Animal Medicine (Cardiology)
Boyer, Clyde I., Jr., Professor and Director of Laboratory Animal Medicine.
Braun, R. Kenneth, Assistant Professor of Veterinary Medicine.
Bruner, Dorsey W., Professor of Veterinary Microbiology and Chairman of the Department of Microbiology. (Emeritus, Retired June 30, 1972)
Calnek, Bruce W., Professor of Avian Diseases.
Campbell, S. Gordon, Associate Professor of Veterinary Microbiology.
Carmichael, Leland E., Professor of Virology.
Casarett, Alison P., Associate Professor of Radiation Biology in the Department of Physical Biology.
Coggins, LeRoy, Professor of Veterinary Virology in the Department of Veterinary Pathology.
Comar, Cyril L., Professor of Physical Biology and Head of the Department of Physical Biology.
Craig, Peter H., Associate Professor of Pathology in the Department of Physical Biology.
Cummings, John F., Associate Professor of Veterinary Anatomy.
Delahanty, Donald D., Professor of Veterinary Surgery.
deLahunta, Alexander, Professor of Veterinary Anatomy.
Dobson, Alan, Professor of Veterinary Physiology.
Dueland, Rudolf, Associate Professor of Small Animal Surgery (Orthopedics).
Duncan, J. Robert, Assistant Professor of Reproductive Pathology.
Evans, Howard E., Professor of Veterinary Anatomy (Sabbatic leave, February, 1973 to July, 1973).
Fabricant, Julius, *Professor of Avian Diseases.*

Fox, Francis H., *Professor of Veterinary Medicine, Director of the Ambulatory Clinic, and Acting Chairman of the Department of Large Animal Medicine, Obstetrics and Surgery.*

Gasteiger, Edgar L., *Professor of Physical Biology.*

Geary, Jack C., *Professor of Radiology and Director of Radiology.*

Georgi, Jay R., *Professor of Veterinary Parasitology.*

Gillespie, James H., *Professor of Veterinary Bacteriology, and Chairman of the Department of Microbiology.*

Habel, Robert E., *Professor of Veterinary Anatomy and Head of the Department of Anatomy.*

Hall, Charles E., *Associate Professor of Reproductive Studies.*

Haynes, N. Bruce, *Associate Professor of Veterinary Science and Director of Veterinary Extension.*

Hintz, Harold F., *Associate Professor of Animal Nutrition.*

Hitchner, Stephen B., *Professor of Avian Diseases and Head of the Department of Avian Diseases.*

Hoffer, Richard E., *Associate Professor of Small Animal Surgery (Soft Tissue).*

Houp, T. Richard, *Professor of Veterinary Physiology.*

Kahrs, Robert F., *Associate Professor of Veterinary Epidemiology.*

Kallfelz, Francis A., *Assistant Professor of Physical Biology.*

King, John M., *Associate Professor of Veterinary Pathology.*

Kirk, Robert W., *Professor of Small Animal Medicine, Head of the Department of Small Animal Medicine and Surgery, and Director of the Small Animal Clinic.*

Krook, Lennart P., *Professor of Veterinary Pathology.*

Lee, Kyu M., *Associate Professor of Virology.*

Lengemann, Frederick W., *Professor of Radiation Biology in the Department of Physical Biology.*

Lesser, George V., *Adjunct Assistant Professor of Dentistry in the Department of Veterinary Pathology.*

Levine, P. Phillip, *Professor of Avian Diseases. (Emeritus, Retired October 1, 1972)*

Lowe, John E., *Associate Professor of Veterinary Surgery.*

Lust, George, *Associate Professor of Biochemistry.*

McEntee, Kenneth, *Professor of Veterinary Medicine and Pathology, and Associate Dean for Clinical Studies.*

Nangeroni, Louis L., *Associate Professor of Physiology in the Department of Physical Biology.*

Norcross, Neil L., *Professor of Immunoochemistry.*

Noronha, Fernando, *Professor of Veterinary Virology.*

Peckham, Malcolm C., *Professor of Avian Diseases.*

Poppensiek, George C., *Professor of Veterinary Microbiology and Dean of the College.*
Post, John E., Associate Professor of Veterinary Pathology.
Postle, Donald S., Associate Professor of Veterinary Science and Director of the New York State Mastitis Control Program.
Pulley, L. Thomas, Assistant Professor of Veterinary Pathology.
Rickard, Charles G., Professor and Chairman of the Department of Veterinary Pathology and Associate Dean for Pre-Clinical Studies.
Roberts, Stephen J., Professor of Obstetrics, Chairman, Department of Large Animal Medicine, Obstetrics, and Surgery, and Director of the New York State Mastitis Control Program (Emeritus, Retired July 1, 1972).
Roenigk, William J., Professor of Radiology.
Sack, Wolfgang O., Professor of Veterinary Anatomy.
Schryver, Herbert F., Associate Professor of Pathology and Director of the Equine Research Program.
Schultz, Ronald D., Assistant Professor of Immunology.
Schwark, Wayne S., Assistant Professor of Veterinary Pharmacology.
Scott, Frederic W., Associate Professor of Veterinary Microbiology.
Sellers, Alvin F., Professor of Veterinary Physiology, and Head of the Department of Physiology, Biochemistry, and Pharmacology.
Sheffy, Ben E., Professor of Nutrition and Assistant Director of the Veterinary Virus Research Institute.
Shively, James N., Associate Professor of Veterinary Pathology.
Stevens, C. Edward, Professor of Veterinary Physiology.
Stephenson, Hadley C., Professor of Veterinary Therapeutics and Small Animal Diseases, Emeritus, and Consultant to the Veterinary Virus Research Institute.
Tapper, Daniel N., Professor of Radiation Biology in the Department of Physical Biology.
Tasker, John B., Professor of Clinical Pathology.
Tennant, Bud C., Professor of Comparative Gastroenterology.
Thompson, John C., Jr., Associate Professor of Environmental Radiation Biology in the Department of Physical Biology.
Timoney, John F., Assistant Professor of Microbiology.
Vaughan, J. Thomas, Professor of Veterinary Surgery and Director of the Large Animal Hospital.
Wasserman, Robert H., Professor of Radiation Biology in the Department of Physical Biology.
Whitlock, John H., Professor of Parasitology.
Whitlock, Robert H., Assistant Professor of Veterinary Medicine.
Winter, Alexander J., Professor of Veterinary Microbiology and Immunology.
Wolf, Kenneth E., Adjunct Professor in Aquatic Animal Disease in the Department of Veterinary Pathology.
Wootton, John F., Professor of Physiological Chemistry.
STATE VETERINARY COLLEGE

PROFESSIONAL STAFF

Adams, Diane L., Radiologic Technologist, Department of Large Animal Medicine, Obstetrics and Surgery.

Angstrom, Clement I., Director of Regional Poultry Diagnostic Laboratory, Kingston, New York (Retired, July, 1973).

Barnes, Francis D., Director of Laboratories for the New York State Mastitis Control Program.

Batik, George, Medical Illustrator, Department of Large Animal Medicine Obstetrics and Surgery.

Baylor, Eugenia, Radiologic Technologist, Department of Large Animal Medicine, Obstetrics and Surgery.

Berryman, Frank C., Intern in the Department of Small Animal Medicine and Surgery.

Borzio, Frank A., Jr., Intern in the Department of Small Animal Medicine and Surgery.

Buergelt, Claus D., Intern in the Department of Veterinary Pathology.

Dequine, Louis E., III, Intern in Surgery, Department of Large Animal Medicine, Obstetrics and Surgery.

Fritz, Albert C., Director of Laboratories and Field Veterinarian, New York State Mastitis Control Program, Kingston, New York.


Hayes, Gerald L., Field Veterinarian, New York State Mastitis Control Program (Earlville, New York).

Hillman, Robert B., Senior Clinician, Department of Large Animal Medicine, Obstetrics and Surgery.

Inhelder, James L., Intern in the Department of Veterinary Pathology.


Johnson, John E., Resident in Surgery, Department of Large Animal Medicine, Obstetrics and Surgery.


Linquist, Wesley E., Supervising Veterinarian, New York State Mastitis Control Program, Ithaca, New York.

McGrath, Charles J., Intern in the Department of Small Animal Medicine and Surgery.

Miller, Pearl S., Associate Librarian, Flower Veterinary Library.

Mowers, Harold G., Farrier, Department of Large Animal Medicine, Obstetrics and Surgery.

Nusbaum, Sidney R., Director of the Diagnostic Laboratory in the Department of Veterinary Pathology.
Reinap, Mia, Librarian, Flower Veterinary Library.
Reinertson, Eric L., Resident in Surgery, Department of Large Animal Medicine, Obstetrics and Surgery.
Riis, Ronald C., Resident in the Department of Small Animal Medicine and Surgery (Comparative Ophthalmology).
Ryan, Gerald D., Lecturer, Department of Large Animal Medicine, Obstetrics and Surgery.
Schmidt, Gregory R., Intern in Surgery, Department of Large Animal Medicine, Obstetrics and Surgery.
Scott, Danny W., Resident in the Department of Small Animal Medicine and Surgery.
Smith, Mary C., Intern in Medicine, Department of Large Animal Medicine, Obstetrics and Surgery.
Urban, William D., Director of Duck Research Laboratory, Eastport, New York.
Wagner, Leslie A., Field Veterinarian, New York State Mastitis Control Program, Canton, New York.
Weaver, Leon D., Intern in Medicine, Department of Large Animal Medicine, Obstetrics and Surgery.
Welch, David C., Intern in Medicine, Department of Large Animal Medicine, Obstetrics and Surgery.
Wilgenbusch, Loras C., Intern in Medicine, Department of Large Animal Medicine, Obstetrics and Surgery.
Wilson, Marijo S., Assistant Librarian, Flower Veterinary Library.
Wright, Joseph M., Jr., Resident in Obstetrics, Department of Large Animal Medicine, Obstetrics and Surgery.

RESEARCH ASSOCIATES, ASSISTANTS, AND SPECIALISTS

Aguirre, Gustavo D., Research Associate in the Department of Veterinary Microbiology.
Argenzio, Robert A., Research Associate, Department of Physiology, Biochemistry, and Pharmacology.
Ballas, Lawrence M., Graduate Assistant, Department of Physiology, Biochemistry, and Pharmacology.
Bemis, David A., Research Assistant in the Department of Veterinary Microbiology.
Berkhoff, German, Research Assistant in the Department of Avian Diseases.
Brautigam, Frederick E., Research Assistant, Department of Large Animal Medicine, Obstetrics and Surgery.
Britt, Alfred L., Senior Research Associate in the Department of Veterinary Pathology.
Brockman, Ronald P., Graduate Assistant in the Department of Physiology, Biochemistry, and Pharmacology.
Burda, Karina, Research Associate, Department of Large Animal Medicine, Obstetrics and Surgery.

Carlson, Jack H., Research Assistant in the Department of Veterinary Microbiology.

Carlson, Pamela, Graduate Assistant, Department of Physiology, Biochemistry, and Pharmacology.

Corbeil, Lynette B., Research Assistant, Department of Large Animal Medicine, Obstetrics and Surgery.

Corradino, Robert A., Senior Research Associate in the Department of Physical Biology.

Cowen, Barrett S., Research Specialist in the Department of Avian Diseases.

Davies, D. Hugh, Research Assistant in the Department of Veterinary Microbiology.

Dellers, Robert W., Senior Research Associate in the Department of Veterinary Pathology.

Dougherty, Ellsworth III, Senior Research Associate in the Department of Veterinary Pathology.

Drost, Cornelius J., Research Associate, Department of Physiology, Biochemistry, and Pharmacology.

Dunn, Henry O., Senior Research Associate, Cytogenetics Section, Department of Large Animal Medicine, Obstetrics and Surgery.

Eisenstadter, Joseph, Senior Research Associate in the Department of Veterinary Pathology.

Fabricant, Catherine G., Research Associate in the Department of Veterinary Microbiology.

Gaskin, Jack M., Research Assistant in the Department of Veterinary Microbiology.

George, Lisle W., Research Assistant in the Department of Veterinary Microbiology.

Gries, Christian L., Senior Research Associate in the Department of Veterinary Pathology.

Higgins, David A., Research Assistant in the Department of Veterinary Microbiology.

Hiltz, Frederick L., Senior Research Associate in the Department of Physical Biology.

Hiscock, Bruce F., Senior Research Associate in the Department of Veterinary Pathology.

Holmes, Dorothy F., Research Associate in the Department of Veterinary Microbiology.

Humphrey Peter, Research Assistant in the Department of Veterinary Microbiology.

Kalunda, Maurice, Research Assistant in the Department of Veterinary Microbiology.
Kemen, Mathias J., Senior Research Associate in the Department of Veterinary Pathology.
Lewkowicz, John, Acting Director of the Computing Facility in the Department of Physical Biology.
Maylin, George A., Senior Research Associate in the Department of Veterinary Pathology.
McCoy, Elena, Research Associate, Department of Large Animal Medicine, Obstetrics and Surgery.
Mills, Daniel C., Research Assistant in the Department of Veterinary Microbiology.
Moraff, Howard, Senior Research Associate in the Department of Physical Biology.
Price, Jesse I., Research Specialist at Duck Research Laboratory, Eastport, New York.
Schlafer, Donald H., Research Assistant in the Department of Veterinary Microbiology.
Schurig, Gerhardt D., Research Assistant, Department of Large Animal Medicine, Obstetrics and Surgery.
Semafuko, Wasswa E., Graduate Assistant, Department of Physiology, Biochemistry, and Pharmacology.
Studdert, Michael J., Senior Research Associate in the Department of Veterinary Pathology.
Taylor, Alan N., Senior Research Associate in the Department of Physical Biology.
Wallin, Bruce K., Research Associate, Department of Physiology, Biochemistry, and Pharmacology.
Wang, Jyi-Tek, Research Associate in the Department of Veterinary Microbiology.
Waterman, Fausto E., Senior Research Associate in the Department of Veterinary Pathology.
Wentworth, Richard A., Senior Research Associate in the Department of Physical Biology.
Wu, Fu-Ming, Graduate Assistant in the Department of Anatomy.

VISITING STAFF

Drost, Maarten, Associate Professor of Reproduction, University of California, Davis, California.
Kishi, Fatchiko, Visiting Fellow, Snow Brand Milk Products Company, Tokyo, Japan.
Williams, Theodore S., Visiting Professor, Tuskegee Institute, Alabama.

VISITING LECTURERS

Becker, Robert, Veterans Administration Hospital, Syracuse, New York.
Bellhorn, Roy, Veterinary Ophthalmologist, Montclair, New Jersey.
Callis, Jerry J., Director, Plum Island Disease Laboratory, Greenport, Long Island, New York.
Capra, Donald J., Associate Professor of Microbiology, Mount Sinai School of Medicine of the City University of New York, New York, New York.
Carmody, William, Mutual of New York, Syracuse, New York.
Corbin, James, Director, Purina Pet Care Center, St. Louis, Missouri.
Danner, Kurt, Institut für Mikrobiologie und infectionskrankheiten des Tiere Ludwig-Maximilians-Universität, Munich, Germany.
Dean, Donald J., Director of Laboratories and Research, New York State Department of Health.
Fackelman, Gustav E., Head, Department of Equine Surgery, Veterinary Surgical Clinic, University of Zurich, Zurich, Switzerland.
Fastier, L. B., Director of Microbiological Research, Tasman Vaccine Laboratory, Ltd., Upper Hutt, New Zealand.
Gold, Joseph, Upstate Medical Center, Syracuse, New York.
Goldner, Andrew M., Assistant Professor, Department of Physiology, School of Medicine, University of California, Davis, California.
Griesemer, Richard A., Director, National Center for Primate Biology, Davis, California.
Harsanyi, Zsolt, Department of Microbiology, Cornell University Medical College, New York, New York.
Hirth, Robert S., Veterinary Pathologist, Bristol Laboratories, Syracuse, New York.
James, W. P. T., Senior Lecturer, Clinical Nutrition and Metabolism Unit, School of Tropical Diseases, University of London, United Kingdom.
Kay, William J., Director of Medicine, Animal Medical Center, 510 E. 62nd Street, New York, New York.
Moon, Harley W., Research Pathologist, National Animal Disease Laboratory, Ames, Iowa.
Roberts, Malcolm, Research Associate in the Department of Large Animal Surgery and Medicine, University of Bristol, Bristol, England.
Schaer, Michael, Animal Medical Center, 510 E. 62nd Street, New York, New York.
Stack, William F., Veterinary Practitioner, Fayetteville, New York.
Stowe, Howard D., Associate Professor of Pathology at University of North Carolina School of Medicine, Chapel Hill, North Carolina.
Tabel, Henry, Animal Disease Research Institute, Hull, Quebec.
Wolf, Kenneth E., Director, U. S. Bureau of Sport Fisheries and Wildlife, Kearneyville, West Virginia.

RESIGNATIONS

Armstrong, James M., Intern in the Department of Veterinary Pathology.
Best, Robert N., Research Technician, Radiology, Department of Large Animal Medicine, Obstetrics and Surgery.
Braide, Ekanem, Graduate Assistant in the Department of Veterinary Pathology.
Brasmer, Timothy H., Associate Professor of Small Animal Surgery.
Brown, Barry C., Intern in the Department of Small Animal Medicine and Surgery.
Brown, Talmage T., Jr., Graduate Assistant in the Department of Veterinary Pathology.
Conrad, Charles R., Graduate Assistant, Radiology, Department of Large Animal Medicine, Obstetrics and Surgery.
Coote, Beverly A., Research Associate in the Department of Veterinary Pathology.
Erickson, E. Denis, Research Assistant, Department of Large Animal Medicine, Obstetrics and Surgery.
Geoge, Jeanne W., Intern in Surgery, Department of Large Animal Medicine, Obstetrics and Surgery.
Hong, Chuen-bin, Graduate Assistant in the Department of Veterinary Pathology.
Johnston, Bruce W., Intern in Medicine, Department of Large Animal Medicine, Obstetrics and Surgery.
Kresge, Charles E., Research Associate in the Department of Veterinary Pathology.
Lorenz, Michael D., Assistant Professor of Small Animal Medicine.
McCauley, Alan D., Instructor in Medicine, Department of Large Animal Medicine, Obstetrics and Surgery.
Robinson, Donald L., Graduate Assistant in the Department of Anatomy.
Taylor, Tex S., Resident in Surgery, Department of Large Animal Medicine, Obstetrics and Surgery.
Twisselmann, Kenneth L., Resident in Surgery, Department of Large Animal Medicine, Obstetrics and Surgery.
Uhazy, Leslie L., Graduate Assistant in the Department of Veterinary Pathology.
The College and its Responsibility

The New York State Veterinary College is one of 18 degree-granting colleges of veterinary medicine in the United States. It is located on a 23-acre campus at the eastern edge of Cornell University and is a Statutory College of the State University of New York.

It is the responsibility of the College to improve the health of man and animals through a variety of programs in veterinary science. These include:

- professional education to train veterinarians for private practice, government, and industry.
- educating the public in modern means of improving the health of pets and livestock and of maintaining human health in all areas related to animals.
- providing the residents of New York State with diagnoses of animal disease and consultation on questions of animal health or animal-related human health.
- research to develop new ways of maintaining animal and human health.

In fulfilling the above responsibilities, during the 1972-73 fiscal year, 295 students and 442 staff members operated on a budget of $7,332,578. Of this amount, 51.6% was appropriated by the New York State Legislature and 48.4% was from other sources.

Objectives of the College Programs

Educational Objectives: The primary educational objective of the New York State Veterinary College is to provide students with professional competence in the diagnosis, treatment, and prevention of animal disease, and to prepare them for a lifetime of learning in their chosen field. To further this objective, the faculty endeavors to:

- provide every student with fundamental knowledge that will serve as general preparation for the various fields of veterinary medicine.
• ensure the continuity of veterinary medical training by integrating training in the basic and clinical sciences.
• encourage each student to acquire special knowledge in his area of special interest by offering elective courses and research opportunities.
• seek continually to improve the quality and efficiency of its teaching and curricular organization.

The second educational objective is the training of veterinary specialists to fill the growing need for teachers, research workers, and technical experts. This objective is fulfilled by a variety of postdoctoral training programs including internships, residencies, and graduate studies leading to the Master of Science, Doctor of Philosophy, and Doctor of Science degrees.

Public Service Objectives: The public service programs of the Veterinary College strive to improve the health of animals and humans by offering residents of New York State current information on animal health and animal-related human health questions. This objective is accomplished by:

• providing diagnostic and consulting services.
• providing public information and training programs.
• preparing numerous scientific, technical, and informational publications.
• upgrading the competence of practicing veterinarians through professional continuing education programs and newsletters.

Research Objectives: The research objectives of the College are the improvement of human and animal health by investigations aimed at producing new knowledge about:

• structural and functional systems relating to disease.
• causes and manifestations of disease.
• treatment of disease.
• ecology and epidemiology of disease.
• poisons and pollutants.
• utilization of research resources.

A Message from the Dean

As the New York State Veterinary College completes its 76th year, further advances in the effort to supply the needs of a rapidly changing society can be recorded. These needs continually tax the intellectual resources of the modern veterinarian. They demand new knowledge for solving problems of animal disease and increasingly sophisticated contributions by veterinary medicine to human health.
Accreditation

Last year the College was again accredited by the Council on Education of the American Veterinary Medical Association. This official accrediting body reviews each veterinary college every five years. As part of the evaluation, this group identified areas in need of improvement. They emphasized the need for updating hospital and laboratory records systems and the need for additional teaching positions, particularly in the clinics and hospitals.

Enrollment Increases

Faced with an increasing demand for veterinarians and an excess of qualified applicants for admission, the College projects an orderly increase in enrollment through the next decade. The public will not accept any compromises in the excellent qualifications of our graduates. The faculty and staff must be enlarged, therefore, to assure quality programs for the increased student body. We are striving for intelligent expansion according to the projections outlined in the Master Plan of the New York State Veterinary College 1973-1985. These projections are in Tables 1 and 2 in the appendix. State Legislature approval last year of ten teaching assistantships was encouraging, and helped to recoup some of the losses incurred by the withdrawal of federal funds for graduate student programs which are so vital for training the teachers and researchers of tomorrow.

Curriculum Change

During the fall semester of 1973, the first stages of transition to a revised curriculum will be initiated. The program includes opportunities for students to develop special interests through elective courses and involves a revision of most subject matter presentations. As sufficient additional faculty and staff are provided, full implementation is anticipated.

Multicategorical Research Wing Nears Completion

The new ten-level research building has been in the planning and construction stages for over ten years. It is now receiving finishing touches for partial occupancy in late 1973. This building provides needed office and laboratory space for expanding research and teaching activities. It contains centralized animal facilities assuring better care and greater comfort for the laboratory animals needed for teaching and research. The new facility will permit expanded studies in comparative medicine, and on metabolic, nutritional, and infectious diseases of food-producing and companion animals. It will enable better use of laboratory animals
for investigating the causes of cancer and chronic and degenerative diseases.

**Animal Health Research Bill**

On the national level, the introduction to Congress of an Animal Health Research Bill is encouraging. If passed, this bill should help correct the deficiency of federal funds for support of research in animal diseases. The nation is recognizing its responsibility to protect animal protein resources. We hope this national effort will supplement the modest but effective support the New York State Legislature provides for organized research and educational activities for control of diseases of food-producing animals.

**College Personnel**

In the past year, the addition of three professional positions has strengthened the teaching program. However, these gains have been overshadowed by the loss of twelve ancillary professional positions. Table 3 shows staffing patterns of the College, comparing the years 1961-67 and 1971-72 with 1972-73. Most changes have occurred in ancillary professional staff. The number of assistants decreased due to federal reduction of graduate training programs. The reduction in the number of field veterinarians in 1971-72 reflected cuts in state appropriations, necessitating a closing of four regional diagnostic laboratories.

The increase in Senior Research Associates indicates a changing appointment policy. Because the State University is requiring accurate indications of student-faculty ratios, new staff members assuming research positions are more likely to be called Research Associates than Professors. The ratio of professional to nonprofessional staff is shown in Table 4.

**Recruitment of Staff**

Recruitment of highly qualified and experienced specialists for teaching, research, and service positions grows more difficult because private practice and industrial incomes are increasing more rapidly than faculty salaries. Furthermore, several new and expanding veterinary colleges are competing vigorously for the limited supply of veterinary academicians. We are striving for improvements in salary structure so we can compete for preeminent veterinarians to staff our clinics, teaching hospitals, and preclinical teaching and research positions.

**Accountability**

We hold our students accountable by examination. The public holds our graduates accountable for professional performance. Likewise, the
faculty and administration of the College expect to be accountable to the taxpayers, and to the legislators who appropriate public moneys. Report preparation takes valuable time from teaching and research programs. Nevertheless, it is essential to examine periodically the present status, to review objectives, and to update the methods of attaining them. Every faculty member contributes to the preparation of each Annual Report. As the activities and programs of the College have expanded, each Annual Report has thickened. This year’s report has been streamlined in the hope of producing a more useful document.

Fiscal

As shown in Table 5, each year sees continual growth in support of College programs. Some increases reflect increased costs and others represent improved programs. The percentage of operating budget derived from nonstate sources (Table 6) has steadily increased, reflecting the ability of our scientific staff to attract external support. The expansion of teaching programs and proposed enrollment increases make it imperative that external funds (usually earmarked for research) be supplemented by funds firmly committed to our educational objectives.

The Students

Selected from over 600 applicants, the class admitted in 1973 contains 65 aspiring veterinarians, including 15 women. Most have previously completed four or more years of college and 83% are New York State residents.

With few exceptions, this group of talented, highly motivated young people will receive the D.V.M. degree in 1977, after four years of rigorous academic and practical training. The program aims to produce complete veterinarians capable of solving any health problem of any species.

Within a few years of graduation and licensure examinations, most will narrow their interests to a few species of domestic or companion animals. To practice their profession effectively, they will need constant study and frequent refresher courses. Accordingly, the College also assumes responsibility for the continuing education of veterinarians.

During their veterinary college years, students are continuously examined in the practical and theoretical aspects of their chosen profession. They are constantly involved with reports, seminars, and inquiries into the nature of disease. Senior students participate in the diagnosis and medical and surgical treatment of patients.

The Student Organization and a companion Student Wives Organization have developed an extensive educational and social program.
Each spring the students organize and host the Annual Veterinary College Open House which attracts over 3,000 visitors from miles around.

The College takes pride in its capable student body. Their enthusiasm
and changing attitudes create a vibrant atmosphere and continually challenge the faculty's ability to present a program tuned to the needs of the future.

Enrollments in the College are summarized in Table 7.

**Teaching Activities**

The four-year professional (D.V.M.) curriculum comprises the major teaching effort of the College. This program keeps the College buzzing with activity. In the first three years, students are involved in formal classroom and laboratory programs. Fourth-year students work side by side with faculty in diagnosing and treating animal diseases in the hospitals, clinics, and laboratories.

With the expanding program, time limitations necessitate many evening and early morning sessions. Students and faculty in the clinics handle emergencies around the clock, so veterinary education goes on while much of the University sleeps.

In this atmosphere more and more professors are preparing duplicated notes to minimize note taking and to permit closer attention to lectures. Improved visual aids are constantly being developed and the new audiovisual facility is being enthusiastically welcomed.

Responding to the needs of a rapidly changing veterinary profession, the Department of Small Animal Medicine has added specialized instruction in anesthesiology, ophthalmology, fluid therapy, and the diseases of exotic pets.

The Department of Anatomy has developed TV tapes for teaching structural and microscopic anatomy. This department is expanding its teaching activities and its involvement in programs of the clinics and laboratories throughout the College.

The Department of Physiology, Biochemistry, and Pharmacology is also strengthening its teaching program. It is adjusting its presentations because entering students are now more uniformly prepared owing to the addition of a course in biochemistry as a requirement for admission.

A course in Laboratory Animal Medicine, and elective courses in Fish Diseases, Wildlife Diseases and Postmortem Diagnosis have been added to the teaching responsibilities of the Department of Pathology. Also in this department, the courses in parasitology have been revised and updated.

In addition to supplying the entire University with courses in Introductory Physiology, the Biological Effects of Radiation, and the Use of Radioactive Tracers in Research, the Department of Physical Biology has introduced new elective courses in Introductory Biostatistics and Clinical and Research Techniques in Veterinary Nuclear Medicine.

The Department of Large Animal Medicine, Surgery and Obstetrics
has improved teaching and tutorials in X ray diagnosis. This department has also added elective courses in Veterinary Research Methodology, Equine Reproduction, and Clinical Nutrition. The course in Jurisprudence and Ethics has been reorganized and expanded to include the legal and ethical responsibilities of veterinarians, and discussions of the methods of practice organization best suited for effective public service. The department is currently developing an expanded program for teaching Veterinary Obstetrics and Animal Reproduction.

The Department of Microbiology is streamlining its teaching programs with revised courses in bacteriology, immunology, and virology. In addition, this department has accepted the new responsibility for teaching Veterinary Public Health.

The Department of Avian Diseases has added the diseases of fish and aquatic mammals to its traditional role of teaching the diseases of poultry.

An attitude of change pervades the educational atmosphere as faculty and students prepare for curriculum change, enrollment increases, and a decade of exciting new roles for veterinarians.

Graduate Students And Special Teaching Activities

Graduate Students

During the 1972-73 fiscal year, 34 candidates for the Ph.D. degree and 13 candidates for the M.S. degree were majoring in the Veterinary College. Of these, 27 hold the D.V.M. degree, 25 are citizens of the United States, and 22 are from 16 other nations. Fifteen Ph.D. degrees and eight M.S. degrees were awarded during the year. Graduate students are involved in a variety of research projects under direct supervision of faculty members, and they contribute significantly to the teaching and research programs of the College.

The decline in graduate students from previous years (see Table 7) is a result of diminishing federal funds and is of serious concern because of their contributions to the programs of the College and because they provide the teachers and researchers of tomorrow.

Universitywide Teaching Programs

Most courses in the undergraduate (D.V.M.) curriculum require extensive prerequisites. Some are open to graduate and undergraduate students from other colleges at Cornell. Members of the Veterinary faculty also give special courses for students from other colleges at Cornell. In all, 559 students from other colleges at Cornell were enrolled in 27 courses offered in the College.
The Academic Year Institute Terminates

For the past 12 years, the National Science Foundation and the Atomic Energy Commission collaborated in supporting training programs for high school science teachers sponsored by the Department of Physical Biology. This nondegree program provided extensive training in biomathematics, the biologic effects of radiation, and radioisotope tracer techniques. It contributed to teacher improvement efforts throughout the United States.

Public Service Activities

A complete documentation of public services performed by the College and its staff would include thousands of contributions to the health and welfare of residents of New York and other states. This service is exemplified by actual diagnosis, treatment, and prevention of animal diseases (many of which are transmissible to man) and by the diagnostic, consulting, and informational programs of the College.

In the calendar year 1972, clinical staff examined, treated, tested, or vaccinated 29,000 cattle, 9,000 dogs, 4,300 horses, 3,500 cats, 1,000 sheep or goats, 900 swine, and 200 miscellaneous wild and pet animals. These data are summarized in Tables 8 to 10. Supporting these services, 9,000 X rays were taken. In the clinical pathology laboratory, 24,000 diagnostic tests were done on pets and livestock (Table 11). About 2,700 diagnostic postmortem examinations were done on companion animals, farm animals, laboratory animals, or wildlife (Table 12). The Diagnostic Laboratory conducted 97,449 tests on specimens sent from New York and other states (Table 13).

In the Regional Poultry Diagnostic Laboratories, almost 22,000 specimens from poultry and birds of all kinds were examined (Table 14).

In a continuing effort to improve milk quality and reduce losses from diseases of the bovine udder, the four regional laboratories of the New York State Mastitis Control Program tested milk samples from about 180,000 cows on 1,900 farms (Table 15).

Fulfilling the obligation to provide the public with information on control of animal diseases, staff members presented informational programs for about 250 kennel clubs, 4-H clubs, farm organizations, and other groups.

The extension veterinarian and the clinical, teaching, and research staff answered over 1,000 mail and telephone inquiries from interested or concerned citizens and distributed thousands of pieces of literature.

In addition to serving the Cornell community, the Veterinary College Library sent about 650 books or other informational items to users outside of Ithaca.
The Office of Student Administration provided hundreds of prospective students with information on courses in veterinary medicine and requirements for admission.

The vast intellectual resources of the College are made available to public and private agencies. Faculty and staff devote a considerable collective effort to consultation and cooperative programs with such agencies as the New York State Department of Agriculture and Mar-
kets, the New York State Department of Health, the New York State Department of Environmental Conservation, the New York State Harness Racing Commission, and the New York State Fair.

Nationally, the staff has provided consultations for the Environmental Protection Agency, the United States Department of Agriculture, the National Academy of Sciences, the Food and Drug Administration, the U.S. Army, the National Institutes of Health, and the U.S. Fish and Wildlife Service.

Many faculty serve as consultants to such agricultural organizations as the Sheep Industry Development Corporation, the State Association of Milk and Food Sanitarians, and artificial insemination cooperatives. Private and public hospitals and many other colleges and universities benefit from staff consultations and from laboratory services.

Nearly half of the faculty acts in an editorial capacity for one or more scientific journals.

The quality of veterinary service available to the public is constantly being upgraded by the continuing education efforts of the College. These include scientific programs at the Annual Conference for Veterinarians and intensive workshops at the Annual Summer Institute for Doctors of Veterinary Medicine. In the past year, faculty and staff gave about 150 scientific presentations to veterinarians. Almost 1,000 letters and telephone calls from veterinarians seeking information were answered last year. A monthly continuing education newsletter from the College reached 1,473 veterinarians.

**Research Activities**

The research activities of the College are aimed at developing pertinent information for the upgrading of human and animal health. This effort involves a wide variety of investigations. In addition to the practical needs of society, the nature of specific investigations is frequently influenced by the specific interests of the agency funding the project, by available facilities, and by the expertise and scientific interests of the investigator. Many important animal and human health problems are not studied because of the lack of financial support. When sufficient public interest or indignation causes funds to become available to the College, productive research activity, such as advances in the control of equine infectious anemia, canine distemper, feline respiratory diseases, and the causes of cancer, soon follows.

The nation is currently rethinking its health research priorities and, in the process, has drastically reduced research spending. The overall effect on the Veterinary College has been a reduction in research activity, a marked reduction in graduate student research programs, a re-
thinking of research objectives, and a search for new sources of research support to replace diminishing federal funds. The College is looking more to private industry, pet and livestock owners and their organizations, and to the State of New York to support the search for new means of maintaining animal and human health. An indication of the variety of projects under way at the College, categorized by major research goals, is given below. (Complete lists of research projects and publications are in later sections of this report.)

I. Research on Structural and Functional Systems Relating to Disease

This research goal includes studies to determine the structure and function of cells, organs, or entire animals and the processes by which they develop and grow. The list includes studies on various birth defects, on the nutritional needs of growing animals, on the functions of the nervous system, and on the effects of radiation on developing embryos. In addition, the College supports studies on the blood supply of the stomach, on the absorption of minerals by the stomach and intestines, on the effects of implanted nuclear energy sources for heart devices, and on the ultramicroscopic structure of cells.

II. Research on the Causes and Manifestations of Disease

Research to determine the causes and effects of animal and human diseases comprise the projects in this goal. There are studies on allergic and immunologic diseases; parasitic diseases; infectious diseases of dogs, cats, cattle, and horses; and on the effects of viruses on the eyes and brains of developing fetuses. Other investigations are seeking the causes of various chronic and degenerative diseases, including numerous types of cancer. Diseases affecting reproduction, and diseases resulting from inadequate nutrition occupy further efforts.

III. Research on Epidemiology and Ecology of Diseases

These are studies to determine the incidence, distribution and economic significance of losses from animal diseases and their effect on man. Such efforts include the surveillance of clinic and laboratory admissions, studies on the interactions of environment and genetics on host parasite relationships, and investigations into the public significance of various diseases of animals.

IV. Research on the Treatment of Disease

Studies to develop new treatments and evaluate old procedures are a constant component of the applied clinical research programs. These
studies include the development of new surgical procedures, new X-ray diagnostic procedures, and new clinical diagnostic tests. Also, studies are under way to improve existing diagnostic tests, and to develop and evaluate new treatments for infectious, digestive, respiratory, and neoplastic diseases of animals.

V. Research on Poisons and Pollutants

Studies to assess the effects of toxic chemicals, toxic plants, or radioactive substances on human and animal health are an expanding part of the research program. Such substances may be present in meat, milk, or other foods of animal origin, or may be present as hazardous environmental contaminants.

A detailed listing of the research projects carried out by each department is found elsewhere. Persons seeking further information are invited to contact the investigators at the College.

Significant Developments of the Year

Planning for a Diagnostic Laboratory

In an effort to correct recognized deficiencies in this state’s diagnostic laboratory services, the Legislature appropriated $120,000 for architectural planning for a well-staffed and well-equipped central diagnostic laboratory to be established at the College in conjunction with the New York State Department of Agriculture. This proposed facility offers promise of long-needed service to livestock owners, pet owners, and the general public. Support of its prompt development is urged.

Audiovisual Production Facility Realized

Staff has been assembled and renovations begun on the long-awaited audiovisual facility which will produce photos, slides, and tapes so vital to the teaching research, continuing education, and public service programs.

Collegewide Computer Services Proposed

The support of the National Institutes of Health has enabled planning on the utilization of computers for research purposes and for preliminary planning on a computerized clinical records system.

Teaching and Research in Comparative Gastroenterology

An interdisciplinary, interdepartmental teaching and research program, designed to study and compare disorders of the digestive tract of the
various animal species, is directing its attention to problem-oriented research and teaching projects.

*Expansion of Activities with Nuclear Energy*

The continuing involvement of the College in the uses of nuclear energy in the diagnosis and treatment of disease has expanded to include studies on the economic and environmental implications of nuclear energy sources.

*Continuing Education Programs Increase Effectiveness*

The number and quality of continuing education programs are increasing continually. These courses are mostly for veterinarians interested in increasing the effectiveness of their public service.

*Goals For The Future*

The long-range goals of the New York State Veterinary College include continual review of all its programs to assure that they keep pace with the needs of a rapidly changing society, and to assure a balance between the teaching, research, and public service responsibilities.

The future must include provision for increased enrollment and for increased opportunities for student exposure to clinical specialties and preventive medicine programs. In addition, the educational objectives of the College include more student exposure to special interest areas in anatomy, physiology, pathology, microbiology, or laboratory and aquatic animal health. Under the leadership of the College, the entire veterinary profession must prepare for greater involvement in environmental and public health responsibilities.

In accepting these responsibilities, the faculty assumes an obligation to offer more elective courses and to present a relevant “core” curriculum to larger classes.

To attain these goals, one of the most crucial needs is the development of clinical faculty. This requires a changing emphasis in clinical post-doctoral programs involving shifting the clinical teaching load from interns to more experienced residents and faculty. People and funds are needed for residencies and clinical professorships in such areas as anesthesiology, cardiology, neurology, dermatology, radiology, clinical pathology, clinical nutrition, medicine and surgery, obstetrics and reproductive studies. The dream of more students in a more flexible program is contingent upon developing these areas.

As the clinical faculty develops, the basic science areas must also grow. Additional professorships will be sought in physiology, develop-
mental anatomy, avian histopathology, public health, pathology, and veterinary nuclear medicine.

Increased enrollment will necessitate the expansion of library services and facilities in the foreseeable future.

Expanding public services to animal owners of the state emphasizes the need for another extension veterinarian or the assignment of additional extension responsibilities to other staff members. Continued efforts must be applied for implementation of plans for expanded diagnostic services.

To meet the need for teachers, researchers, and technical experts, emphasis must be placed on specific postdoctoral programs leading to specialty board qualification in a variety of areas.

As the pet-owning public increases, diseases of companion animals must be emphasized in teaching and research programs, with particular attention given to diseases transmissible to man from his companion animals.

The changing patterns of federal health programs require that the faculty and administration of the College aggressively seek new sponsorship for its research programs. The needs of changing agricultural and pet animal populations will be met only by constant reappraisal of the research goals of a problem-oriented research program.

The overriding goal that must constantly pervade all College activities is preparation to meet the needs of a changing world. This necessitates constantly stimulating staff and students to cultivate the personal flexibility and professional versatility required to maintain the pace of changing times, and to be leaders in the race against obsolescence.

**Research Activities**

*Department of Anatomy*

- Peripheral Nerve Diseases in the Dog and their Comparative Medical Significance. J. F. Cummings and A. deLahunta
- Morphological Study of the Effects of Overnutrition on Skeletal Development in Great Dane Dogs. F. Wu
- The Equine Small Intestine. G. D. Doyle
- Clinical Neurology and Neuropathology. A deLahunta
- Ocular Lesions and Lesions of the Central Nervous System Induced by Bovine Virus Diarrhea. Talmage T. Brown, Stephen I. Bistner, Kenneth McEntee, Frederic W. Scott, and A. deLahunta
- Revision of the Laboratory Guide for Applied Anatomy. R. E. Habel
- Textbook on the Viscera of the Domestic Mammals. W. O. Sack
- Illustrated Veterinary Anatomical Nomenclature. W. O. Sack
Medical Illustrations: Lewis L. Sadler
   Cerebellar Development. A. deLahunta
   Canine Development. H. E. Evans
   Applied Anatomy. R. E. Habel
   Illustrations of Nomenclature. W. O. Sack
   Diagrams explaining museum specimens. W. O. Sack
   Illustrations for classroom hand-outs
   Photographs of displaced abomasum in dissection laboratory. W. O. Sack

Department of Avian Diseases

The Etiology and Pathogenesis of Ulcerative Enteritis ("Quail Disease")
G. A. Berkhoff
Lyophilization of Rous Sarcoma Virus. B. W. Calnek and S. B. Hitchner
The Influence of Age at Exposure on the Pathogenesis of Marek's Disease. B. W. Calnek
An Antigen Encountered in "Normal" Avian Cells Which May Confuse Virological or Serological Tests. B. W. Calnek
Precipitating Antibodies in Chicken Serums Which React Against Tryptose Phosphate Broth. B. W. Calnek
Prevalence of Antibody Against Chicken Reoviruses. B. W. Calnek
Neutralizing Antibody Formation in Chickens Following Primary and Secondary Infectious Bronchitis Virus Stimulation. B. S. Cowen, S. B. Hitchner
Adaptation of Infectious Bronchitis Virus Strains to Cell Culture. B. S. Cowen, S. B. Hitchner
Serotyping of Infectious Bronchitis Virus Strains or Field Isolates by Virus Neutralization. B. S. Cowen, S. B. Hitchner
pH Stability Tests on Infectious Bronchitis Virus Strains. B. S. Cowen, S. B. Hitchner
Studies on the Classification of Avian Mycoplasma. Julius Fabricant
Studies on the Potential Role of Infectious Bronchitis Infection of Growing Birds on Subsequent Egg Quality. J. Fabricant and S. B. Hitchner
Immunoglobulin Classes of Fowl Antibody to Marek's Disease Virus. D. A. Higgins
The Effect of Silica on Pathogenesis of Marek's Disease. D. A. Higgins
Toxicity Study of Low Viscosity Polybutene in White Pekin Ducks. L. Leibovitz
Streptococci Associated with Endocarditis and Arthritis of White Pekin Breeder Ducks. L. Leibovitz
Causes of Mortality in Larval Shellfish. L. Leibovitz
Marble Spleen Syndrome Induced in Pheasants by Inoculation of Spleen from Turkeys with Hemorrhagic Enteritis. M. C. Peckham and R. R. Reynolds.
Transmission of Pigeon Herpes Virus to Sparrow Hawks (Kestrel). M. C. Peckham
Studies of Single and Combined Infection of Chickens with Two Isolates of Marek's Disease Virus. M. W. Smith
The Effect of Virus Pathogenicity on Antibody Production in Marek's Disease. M. W. Smith and B. W. Calnek

Department of Large Animal Medicine, Obstetrics and Surgery
Mineral Metabolism in the Horse. H. F. Schryver, H. F. Hintz, J. E. Lowe, Peter H. Craig and Robert F. Argenzio
Digestion in the Horse. H. F. Hintz, H. F. Schryver, and J. E. Lowe
Vitamins in the Horse. H. F. Schryver, H. F. Hintz, J. E. Lowe, John M. King, and Lennart Krook
Evaluation of Analgesics for Equine Colic. J. E. Lowe
Development of an Osteoarthritis Model for the Study of Antiarthritic Drugs. J. E. Lowe and J. Thomas Vaughan
Radiologic Studies on Canine Hip Dysplasia. George Lust, Gerald D. Ryan, J. C. Geary and William J. Roenigk
Radiologic Studies on Lead Poisoning in a Pig. Frank Hsu, G. D. Ryan, Diane Adams, and Eugenia Baylor
Radiologic Studies on Exogenous Vitamin D and Calcium Binding Protein in a Guinea Pig. Margaret Chapman, G. D. Ryan, and W. J. Roenigk
Radiologic Studies on Osteopathies of the Dog in Over Nutrition. L. Krook and W. J. Roenigk
An Evaluation of Three Methods of End to End Intestinal Anastomosis in the Horse. Eric L. Reinertson, G. D. Ryan, and Eugenia Baylor
The Use of Direct Current for Pastern Arthrodesis in the Horse. John E. Johnson, G. D. Ryan and E. Baylor
A Study to Improve Visualization of the Navicular Bone When Radiographing the Equine Foot. G. D. Ryan
Radiographic Evaluation of the Equine Tarsus from a Positional Point of View. G. D. Ryan
Radiographic Evaluation of Inspiratory Versus Expiratory Phase Radiography in the Diagnosis of Canine Lung Disease. G. D. Ryan
Use of Culpak-kits to Transport Milk Samples for Culture. Tatehiko Kishi and Donald S. Postle
Recovery of Mastitis Pathogens from Frozen or Refrigerated Milk Samples. Gerald L. Hayes
Method of Timing for Collection of Milk Samples from Dairy Herds to Minimize Contamination. Leslie A. Wager
Examination of Techniques for Increasing Efficiency of Recovery of Mastitis Pathogens from Abnormal Secretions from which no Pathogens were Recovered on Routine Culture. Frances D. Barnes, Wesley E. Linquist and Carol H. Burgess
Experimental Mycoplasma agalactiae var. bovis Infection in the Bull. Norman LaFaunce and K. McEntee
Internal Measurements of Pelvises of Beef Heifers to Determine Correlation of Area to Dystocia and Practicality of Pelvimeter in Selection for Breeding. J. I. Miller, C. E. Hall and W. Henning.
Adenomyosis of the Bovine and Canine Epididymis. K. McEntee
Karyotyping Chromosomes in Bovine Blastocysts from Superovulated Heifers. R. H. Foote, M. Drost, G. Anderson and H. O. Dunn
Anastomosis of the Utero-ovarian and Anterior Mammary Veins in Sheep. J. E. Hixon and M. Drost
Surgical Preparation of Non-entry Teaser Bulls. M. Drost, Lu Ling-Chern and R. H. Foote
Egg Transfer Techniques in Cattle. M. Drost and J. M. Wright
IBR Virus Reexcretion Following ACTH Treatment of Serologically Positive Bulls. C. W. Hall, W. Hansel, D. Smith, B. E. Sheffy, and E. Scherline
Immunity in the Bovine Mammary Gland. N. L. Norcross
Typing the Streptococcus agalactiae Isolates from New York State Regional Mastitis Control Laboratories. N. L. Norcross
A Study of the Response to Streptococcus equi in the Horse. E. D. Erickson and N. L. Norcross
Serological Typing of Staphylococcal Mastitis Pathogens. N. L. Norcross
Immunization of Cows from Certain Problem Herds. N. L. Norcross
The Etiology of Bovine Fetal Mummification. R. F. Kahrs and Frederick W. Scott
Epidemiologic Studies on Bovine Winter Dysentery. R. F. Kahrs, F. W. Scott, Robert B. Hillman, Bud C. Tennant, S. Gordon Campbell and Charles E. Stevens
Antigenic Analysis of Vibrio fetus. A. J. Winter, K. Burda, E. McCoy and J. R. Duncan
Experimental Infections of Cattle with Vibrio Fetus. Gerhardt Schurig, K. Burda, C. E. Hall, J. R. Duncan and A. J. Winter
Immunoglobulins in Serum and Secretions of Normal Cattle. J. R. Duncan and J. Borzio
Neonatal and Adult Immunoglobulin Profiles. J. R. Duncan, J. Borzio and J. B. Tasker
Fetal Immunoglobulin Profiles. J. R. Duncan, J. Borzio, T. Brown and R. Schultz
Chromosome Studies. H. O. Dunn
Mechanical Properties of Tendons and Ligaments in the Leg of the Horse. J. E. Lowe, D. L. Bartel and W. O. Sack
Evaluation of Anastomosis Techniques of the Small Intestine in the Horse. D. L. Bartel and J. T. Vaughan
Large Animal Surgical Cannulae Development. D. L. Bartel and J. T. Vaughan
Large Intestinal Evacuation Cannula for use in the Laparotomy. D. L. Bartel; J. T. Vaughan
Kinematics of the Canine Hip. J. T. Bartel
Experimental Analysis of Bone Plate Fixation Systems and Bone/Adhesive/Prosthesis systems. D. L. Bartel, R. Dueland, J. T. Vaughan and Eggert
Post Operative Strength of Sutured Wounds. D. L. Bartel and J. T. Vaughan
Investigation into the Pathogenesis of Neonatal Enteric Infections in Calves. B. C. Tennant and D. Ward
Investigation into the Mechanisms of Defective Organic Anion Transport in Hepatic Disease. B. C. Tennant and W. Amand

An Evaluation of Three Methods of End-to-End Intestinal Anastomosis in the Horse. E. L. Reinertson

In Vitro Tensometric Studies of the Reconstructed Sutured Abdominal Incision in the Horse. R. Allen

Operating Table for Large Animals. J. T. Vaughan

Evaluation of Meclofanamic Acid as an Antiflammatory Agent in the Horse. J. T. Vaughan and S. J. Roberts

Evaluation of Bay-Va 1470 (Rompun-Bayer) (Chemagro) as a tranquillizer, muscle relaxant and analgesic agent in the horse and the sheep. J. T. Vaughan

Evaluation of Neo-Arth (Generics Corporation) for the Treatment of Arthritis in Horses. J. T. Vaughan and J. E. Lowe


Induced Parturition in Mares. R. B. Hillman

Field Trial: Testing the Efficacy of Terramycin Against Naturally Occurring Calf Scours. R. K. Braun

Evaluation of an Oral Electrolyte Formulation Administered to Dehydrated Calves with Diarrhea. R. K. Braun

Role of Vitamin B_{12} in the Pathogenesis of Ketosis. J. M. Elliot and R. B. Hillman

Vitamin E and Selenium Levels in Plasma and Serum of Neonatal Calves Purchased at Commission Sales. D. E. Hogue and R. K. Braun

The Effect of Early Feeding and Management on the Neonatal Calf. R. G. Warner and R. K. Braun

Department of Veterinary Microbiology


Tests for Measuring Cell Mediated Immunity in Dogs. M. Appel

Distribution of Canine Distemper Vaccine Virus in Dogs. M. Appel

The Effects of Distemper on the Brain of Dogs. M. Appel

Measles Vaccine Protection Against Distemper. J. A. Baker

Protein and Amino Acid Requirements of Dogs. Charles A. Banta, Mary M. Krinsky, and Ben E. Sheffy


Canine Respiratory Disease. D. Bemis
The In Vivo and In Vitro Assay of Botulism Toxin. B. C. Mills, S. G. Campbell, and M. E. Richmond
The Autoallergenicity of Milk. S. G. Campbell
Agammaglobulinemia in Newborn Ruminants. S. G. Campbell and M. Atlas
Evaluation of a Live Infectious Bovine Rhinotracheitis Vaccine Modified by Passage in Cells of an Alien Host. D. H. Davies
The Effects of Repeated Corticosteroid Treatment in the Recrudescence of IBRV. D. H. Davies
Studies on Immunogenic Agents Against Canine Brucellosis. Lisle George
Studies of a Rapid Plate Agglutination Test for Clinical Diagnosis of Canine Brucellosis. L. George
Feline Urolithiasis. Catherine G. Fabricant, J. H. Gillespie and Peter Humphrey
Demonstration of Feline Leukemia Virus Antibody in Cats by Conglutination. K. M. Lee and Jyi-Teh Wang
Feline Viral Diagnostic Studies. D. F. Holmes, and J. H. Gillespie
Serological Classification of Feline Caliciviruses. Maurice Kalunda, K. M. Lee, D. F. Holmes, and J. H. Gillespie
Studies on Conglutinating Antibodies to Feline Leukemia Virus. J. T. Wang and K. M. Lee
Pathogenesis of Degenerative Joint Disease. George Lust
Development of Hip Dysplasia in Dogs. G. Lust, J. C. Geary, and B. E. Sheffy
Studies on the Mechanism Responsible for Suppressed Replication of Canine Herpesvirus at Elevated Temperature. G. Lust, and L. E. Carmichael
The Canine and Feline Immune Response. R. D. Schultz, F. W. Scott, J. R. Duncan, D. Scott, and J. H. Gillespie
Immunosuppressive Aspects of Viral Infection. R. D. Schultz, F. W. Scott, D. F. Holmes, and J. H. Gillespie
Winter Dysentery. F. W. Scott, S. G. Campbell, R. B. Hillman, R. F. Kahrs, C. E. Stevens, B. C. Tennant, and others
Viral Infections of the Feline Fetus. F. W. Scott, R. D. Schultz, and J. H. Gillespie
Feline Panleukopenia Vaccination Studies. F. W. Scott, R. D. Schultz, Leo Wuori, Jeffrey LaCroix
Feline Respiratory Diseases. F. W. Scott, Michael D. Lorenz, D. F. Holmes, R. D. Schultz, and J. H. Gillespie
Effect of Vitamin C on Host Response to Infectious Disease. B. E. Sheffy, M. M. Krinsky, and Alma J. Williams
Chronic Vitamin D Toxicity in Dogs. B. E. Sheffy, A. J. Williams, L. T. Pulley and J. Bentinck-Smith
Carbohydrate Requirements of Dogs. B. E. Sheffy, M. M. Krinsky, A. J. Williams and C. A. Banta
Calcium in Canine Nutrition. B. E. Sheffy, A. J. Williams, Francis A. Kallfelz and Lennart Krook
Re-evaluation of Trace Element Requirements of Dogs. B. E. Sheffy, M. M. Krinsky, A. J. Williams, and C. A. Banta
Nutritional Adequacy of Fortified All Meat and Commercial Dry Dog Food. B. E. Sheffy, A. J. Williams, M. M. Krinsky, J. C. Hardy, and C. A. Banta
Inactivated IBR Vaccine—Efficacy Evaluations. B. E. Sheffy and Susan Rodman
Erysipelothrix Arthritis in Swine. J. F. Timoney
Leptospira Antibodies in Dog Sera and their Association with Renal Lesions. J. F. Timoney

Department of Pathology
Diagnosis of Equine Infectious Anemia by Immunodiffusion Test. L. Coggins
Survey of Incidence of Equine Infectious Anemia. L. Coggins and M. J. Kemen
Purification of Equine Infectious Anemia. L. Coggins, K. A. Majiyagbe, N. L. Norcross, and M. J. Kemen
Tissue Culture Studies on Equine Infectious Anemia. L. Coggins, and S. L. Yeater
Electron Microscopy of Equine Infectious Anemia. J. N. Shively and L. Coggins
Epidemiology of Equine Infectious Anemia. M. J. Kemen and L. Coggins
Serological Comparisons of Equine Adenoviruses. M. J. Studdert and L. Coggins
Investigations of Respiratory Diseases in Horses. L. Coggins, M. J. Kemen, and M. J. Studdert
Hereditary Neuronal Abiotrophy in the Swedish Lapland Dog. E. Sandefeldt, J. F. Cummings, A. deLahunta, G. Bjorck, and L. Krook

Studies on Calcitonin and Bone Metabolism. L. Krook, J. P. Whalen, E. A. Nunez, W. A. Wimsatt, I. MacIntyre, F. Doyle, and J. Pennock

Effects of Yellow Phosphorus on Bone Remodeling. J. F. Whalen, N. O'Donohue, L. Krook, and E. A. Nunez

The Bone Lesions of Neonatal Transplacental rubella syndrome. J. P. Whalen, P. Winchester, L. Krook, R. Dische, and E. A. Nunez

Lead, Zinc, and Calcium Interactions in Growing Pigs. F. Hsu, L. Krook, W. G. Pond, J. N. Shively, and J. R. Duncan

Protein and Bone Development in Growing Pigs. K. Sansi, L. Krook, and W. G. Pond


Morphologic Diagnostic Procedures. L. T. Pulley and J. N. Shively

Electron Microscopic Pathology. N. J. Shively

Spontaneous Rabbit Fibroma. L. T. Pulley, J. N. Shively, and F. Noronha

Feline Mammary Hyperplasia and Neoplasia. L. T. Pulley

Carson's Fixative. J. N. Shively and L. T. Pulley

Infectious Pancreatic Necrosis in Trout. C. I. Boyer, Jr. and F. M. Noronha


Diagnosis of Abortion Due to Equine Herpesvirus 1. R. W. Dellers

Survey of Prevalence of Equine Adenovirus Antibodies. R. W. Dellers

Attempts to Detect and Isolate a Bovine Reovirus-Like Agent. R. W. Dellers

Survey of Prevalence of Bovine Herpes Mammillitis Antibodies. R. W. Dellers

Differentiation of Two Classes of Feline Leukemia Virus. C. G. Rickard, J. E. Post, F. Noronha, E. Dougherty, III, and L. Barr

Endogenous Feline Leukemia Virus in Specific-Pathogen-Free Cats. J. E. Post, F. Noronha, E. Dougherty, III, C. L. Gries, L. Barr, and C. G. Rickard

The Demonstration of Conventional (Exogenous) Leukemia Virus in Different Cat Populations. J. E. Post, L. Barr, and C. G. Rickard

Virus Resembling C-Type Leukemia Virus in Anemic Cats. J. E. Post and L. Barr
Preparation of Specific Antisera Against the Principal Group-Specific Antigens of Feline Leukemia Virus. F. Noronha, A. Poco, and C. G. Rickard
Cloning of Feline Leukemia Virus. C. B. Hong, and F. Noronha
Search for a Feline Mammary Tumor Virus. C. L. Gries, E. Dougherty, III, J. E. Post, L. Barr, and C. G. Rickard
Systematics of Strongylid Parasites of the Horse. E. I. Braide and J. R. Georgi
Chemical Characteristics of the Exsheathing Substance in Haemonchus contortus cayugensis. J. H. Whitlock and R. W. Wanner

Department of Physical Biology

Estimation and Control of Radionuclides in Milk and Other Foods Following Accidental Releases. R. A. Wentworth, J. C. Thompson, Jr. and F. W. Lengemann
Metabolism of Selected Fission Products. F. W. Lengemann
Biological Costs of Electrical Energy Production. C. L. Comar, J. C. Thompson, Jr., and R. A. Wentworth
Radiation Effects on Mouse Embryos. A. P. Casarett
Preimplantation Development of Mouse Embryos Sired by Males Irradiated for Successive Generations. A. P. Casarett
Transfer of Cations and Anions Across Mammary Epithelium. C. Sagan and F. W. Lengemann
Diphenylhydantoin (An Anti-Convulsant): Effect on Calcium Absorption and Calcium-Binding Protein Synthesis. R. H. Wasserman and A. Bar
Control of Calcium Absorption: A Test of the "Kidney Conversion Hypothesis". A. Bar and R. H. Wasserman
Evidence for an Alternate Vitamin D-dependent Path of Calcium Translocation in Gut. R. H. Wasserman, A. N. Taylor and L. Lipiello
Isolation and Characterization of Intestinal Calcium-Binding Proteins from the Bovine and Other Species. C. S. Fullmer and R. H. Wasserman
Vitamin D and Phosphate Transport. A. N. Taylor
Vitamin D and the Mammary Gland. A. N. Taylor
Effect of Solanum malacoxylon on Calcium Absorption and Calcium-Binding Protein Synthesis. R. H. Wasserman, R. A. Corradino, and A. N. Taylor
Embryonic Chick Intestine in Organ Culture: Studies on the Vitamin D-Mediated Calcium Absorptive Mechanism. R. A. Corradino
Spontaneous Recovery from Dietary Strontium Inhibition of the Intestinal Calcium Binding Protein.  R. A. Corradino
Separation of Thyroxine and Triiodothyronine Binding Proteins from Dog and Human Serum by Affinity Chromatography. Vladimir Mitin and Francis A. Kallfelz
Long Term Retention of Tc-95m After Administration of Labeled Polyphosphate or Diphosphanates in Dogs. F. A. Kallfelz, G. Subramanian, R. J. Blair and J. G. McAfee
Vitamin D. Assay Based on the Vitamin D-dependent Calcium-Binding Protein.  A. Bar and R. H. Wasserman
Observations on Thyroid Gland Function in Dogs: Response to Thyrotropin and Thyroidectomy and Determination of Thyroxine Secretion Rate.  F. A. Kallfelz
Radiobiological Effects of Simulated Nuclear Power Sources for Artificial Hearts.  F. A. Kallfelz, P. H. Craig, A. P. Casarett, and C. L. Comar
Thyroid Function Studies in the Domestic Animals: Free Thyroxine Index.  F. A. Kallfelz and R. P. Erali
Thyroid Gland Function in Cows with Parturient Hypocalcemia.  F. A. Kallfelz, and R. B. Hillman
Factors Influencing Radiation Induced Incapacitation in the Rat.  E. L. Gasteiger and Mark Windt
The Computer Facility.  John Lewkowicz and Fred Hiltz

Department of Physiology, Biochemistry and Pharmacology

Electrolyte Absorption from the Equine Large Intestine.  R. A. Argenzio and C. E. Stevens
Sites of Organic Acid Production in the Gastrointestinal Tract of the Young Pig.  R. A. Argenzio, M. Southworth and C. E. Stevens
Digesta Passage and Water Exchange in the Equine Large Intestine.  R. A. Argenzio, John E. Lowe, Duncan W. Pickard, and C. E. Stevens
Glucose 6-phosphatase and the Regulation of Hepatic Glucose Production.  W. J. Arion, B. K. Wallin, L. Ballas, P. Carlson and Alex J. Lange
Studies on the Mechanism(s) of the Toxicity of Calcium Ethylenediaminetetraacetate (an antidote for certain metal and radioactive poisons).  A. L. Aronson
Comparative Toxicity of Polyaminocarboxylic Acid Chelating Agents.  A. L. Aronson and K. M. Rogerson
Turnover and Liver Metabolism of Free Fatty Acids.  E. N. Bergman
Studies on the blood flow of the rumen mucosa. A. Dobson and A. F. Sellers
Study of the Intermediary in the Effect of Carbon Dioxide on Rumen Epithelial Permeability. A. Dobson and A. F. Sellers
Bicarbonate Secretion by the Glandular Saccules of the Llama Fore­stomach. R. H. Eckerlin and C. E. Stevens
Responses of the Ruminant to Glu­co­priv­i­ta­tion: Feeding Behavior, Glyco­gen­o­lysis Fore­stomach Motility, and Abomasal Secretion. T. R. Houpt and K. A. Houpt
Effects of Ammonia on Transport of Glucose by the Small Intestine. T. R. Houpt and K. A. Houpt
Renal Metabolism of Glucose Precursors in the Ruminant. C. F. Kauf­man and E. N. Bergman
The Effect of Calcium Ethyldiaminetetraacetate on Lyosomes and Collagen Metabolism in the Rat. K. M. Rogerson and A. L. Aronson
Neurochemical Correlates of Experimental Cretinism. W. S. Schwark
Influence of Reserpine on Serotonin Metabolism in the Horse. W. S. Schwark and G. A. Maylin
Enzymology of Protein Digestion in the Equine Large Intestine. J. F. Wootton and Loretta Tu

Department of Small Animal Medicine and Surgery
Hereditary Corneal Dystrophy in Manx Cats. S. I. Bistner and R. C. Riis
Study of the Normal and Abnormal Cytologic Appearance of the Canine Conjunctiva. R. C. Riis
Design and Development of Canine Total Hip Prosthesis. R. Dueland
Deep Hypothermia and Total Cardiac Arrest for Open Heart Surgery in the Canine. R. E. Hoffer and G. R. Bolton
Effect of Piezoelectric Potentials on Wound Healing in Miniature Swine. R. Dueland and R. E. Hoffer
Clinical Evaluation of the Broad Spectrum Anti-Bacterial, Anti-Fungal, and Anti-Inflammatory Otic Preparation. D. W. Scott
Clinical Evaluation of Oral Cephalexin in the Dog and Cat.  D. W. Scott
Modified Deep Dorsal Laminectomy in the Dog for Surgical Treatment of Disc Disease.  E. J. Trotter

Publications

Department of Anatomy


Department of Avian Diseases

Department of Large Animal Medicine, Obstetrics and Surgery


Vaughan, J. T. Physical restraint. In Equine Medicine and Surgery, 2nd


Department of Microbiology


Department of Pathology


Hong, C. B. Feline leukemia-sarcoma viruses: Detection of viral anti-


Department of Physical Biology


Kallfelz, F. A. Some recent technical advances for the study of bone...


*Department of Physiology, Biochemistry and Pharmacology*


Chien, Wan-Ju and C. E. Stevens. Coupled active transport of Na and

Department of Small Animal Medicine and Surgery

## STATEMENT OF INCOME

**Years Ended June 30, 1972 and 1973**

<table>
<thead>
<tr>
<th></th>
<th>1971-2</th>
<th>1972-3</th>
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<tbody>
<tr>
<td>College Fund Balance July 1</td>
<td>$ 603,447.28</td>
<td>$ 816,095.30</td>
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<tr>
<td><strong>Income</strong></td>
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<tr>
<td>Student Tuition and Fees</td>
<td>81,082.44</td>
<td>294,968.07</td>
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<td>Sales and Services</td>
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<td>Clinics</td>
<td>509,384.63</td>
<td>555,433.60</td>
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<td>Other</td>
<td>427,546.45</td>
<td>372,427.84</td>
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<td>Gifts</td>
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<td>Endowment Income</td>
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<td>4,716.00</td>
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<td>Financial Aids</td>
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<td>Transfers from (to) Endowed Division</td>
<td>(11,408.85)</td>
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<td>Transfer to Plant – Finger Barns</td>
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<td>Grants and Contracts Direct Cost</td>
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<td>2,340,124.39</td>
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<td>Appropriations</td>
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<td>State of New York</td>
<td>3,393,230.35</td>
<td>3,877,145.58</td>
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<td>Federal</td>
<td>38,712.77</td>
<td>38,230.61</td>
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<td><strong>Total Income and Transfers</strong></td>
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<td>7,869,369.41</td>
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<td><strong>Expenditures</strong></td>
<td>7,123,602.87</td>
<td>7,648,570.43</td>
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<td><strong>Income and Transfers in Excess of Expenditures</strong></td>
<td>212,648.02</td>
<td>220,798.98</td>
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<td>College Fund Balance June 30</td>
<td>$ 816,095.30</td>
<td>$1,036,894.28</td>
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TABLE I. STATEMENT OF OPERATIONS BY OBJECT AND SOURCE—YEAR ENDED JUNE 30, 1973

<table>
<thead>
<tr>
<th>Object</th>
<th>Salaries &amp; Wages</th>
<th>Capital</th>
<th>General</th>
<th>Student Aid</th>
<th>Total</th>
<th>State Appropriation</th>
<th>Grants &amp; Contracts and USDA</th>
<th>College</th>
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</thead>
<tbody>
<tr>
<td><strong>ANATOMY</strong></td>
<td>204,611.03</td>
<td>10,339.19</td>
<td>18,103.49</td>
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<td>233,053.71</td>
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<td><strong>AVIAN DISEASES</strong></td>
<td>417,485.40</td>
<td>12,801.22</td>
<td>45,889.18</td>
<td>10,300.00</td>
<td>486,473.80</td>
<td>396,762.20</td>
<td>77,916.10</td>
<td>11,797.50</td>
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<td><strong>LARGE ANIMAL</strong></td>
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<td>Administration</td>
<td>133,139.11</td>
<td>46,421.22</td>
<td>70,417.01</td>
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<td>249,977.34</td>
<td>128,961.11</td>
<td>20,579.87</td>
<td>104,363.96</td>
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<td>Clinical Pathology</td>
<td>88,849.36</td>
<td>701.29</td>
<td>(16,441.17)</td>
<td>73,109.48</td>
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<td>74,561.39</td>
<td>28.00</td>
<td>41,979.11</td>
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<td>Equine Research</td>
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<td>1,475.75</td>
<td>47,597.97</td>
<td>134,153.53</td>
<td></td>
<td>124,345.03</td>
<td>1,475.75</td>
<td>8,332.75</td>
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<td>Mastitis Control</td>
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<td>4,461.19</td>
<td>48,067.01</td>
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<td>306,362.72</td>
<td>11,797.50</td>
<td>51,905.07</td>
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<tr>
<td>Mastitis Research</td>
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<td>31,556.81</td>
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<td>75,079.07</td>
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<td>Medicine</td>
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<td>76,644.00</td>
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<td>211,035.24</td>
<td>8,179.95</td>
<td>10,408.75</td>
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<td>Radiology</td>
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<td>3,726.72</td>
<td>47,597.97</td>
<td>134,153.53</td>
<td></td>
<td>167,639.99</td>
<td>20,579.87</td>
<td>122,270.49</td>
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<tr>
<td>Reproductive Pathology</td>
<td>228,354.76</td>
<td>4,461.22</td>
<td>37,267.72</td>
<td>282,989.07</td>
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<td>227,411.23</td>
<td>1,382.75</td>
<td>114,366.86</td>
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<td>Surgery</td>
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<td>343,160.84</td>
<td>1,382,997.96</td>
<td>321,954.47</td>
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<td>Microbiology</td>
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<td>27,886.88</td>
<td>56,773.98</td>
<td>404,967.46</td>
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<td>210,205.06</td>
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<td>Virus</td>
<td>409,894.68</td>
<td>59,554.89</td>
<td>174,639.20</td>
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<td>644,088.77</td>
<td>268,226.70</td>
<td>375,820.59</td>
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<td><strong>PATHOLOGY</strong></td>
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<td>841,778.33</td>
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<td>77,870.81</td>
<td>44,083.35</td>
<td>99,920.30</td>
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<td>Equine Infectious Anemia</td>
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<td>7,196.50</td>
<td>33,452.70</td>
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<td>46,162.36</td>
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<td>44,083.35</td>
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<td>Parasitology</td>
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<td>17,363.79</td>
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<td>97,912.35</td>
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<td>560,039.50</td>
<td>300,061.12</td>
<td>229,019.25</td>
<td>30,959.13</td>
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<td><strong>SMALL ANIMAL</strong></td>
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<td>18,784.89</td>
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<td><strong>DEAN'S OFFICE</strong></td>
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<td>578,243.99</td>
<td>318,846.01</td>
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<td><strong>ACADEMIC TOTAL</strong></td>
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<td>440,240.24</td>
<td>1,386,463.08</td>
<td>119,413.25</td>
<td>2,378,251.54</td>
<td>3,618,071.50</td>
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Page 56 of the Annual Report of the Statutory Units at Cornell University Veterinary College
<table>
<thead>
<tr>
<th></th>
<th>Salaries &amp; Wages</th>
<th>Capital</th>
<th>General</th>
<th>Student Aid</th>
<th>Total</th>
<th>State Appropriation</th>
<th>Grants &amp; Contracts and USDA</th>
<th>College</th>
</tr>
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<tbody>
<tr>
<td>LIBRARY</td>
<td>72,456.87</td>
<td>53,177.30</td>
<td>4,294.67</td>
<td>129,928.84</td>
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<td>Student Services</td>
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<td>Operation and Maintenance of Plant</td>
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<td>General Administration</td>
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<td>59,996.67</td>
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<td>153,438.52</td>
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<td>Staff Benefits</td>
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<td>35,796.65</td>
<td>35,786.65</td>
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<td>General Institutional Expense</td>
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<td>Random Dog Facility</td>
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<td>(2,671.50)</td>
<td>9,988.82</td>
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<td>Other</td>
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<td>16,383.99</td>
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<td>Total</td>
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<td>1,540,300.12</td>
<td>7,648,570.43</td>
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<td>1,393,069.85</td>
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### TABLE II. STATEMENT OF OPERATIONS BY FUNCTION AND SOURCE – YEAR ENDED JUNE 30, 1973

<table>
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<tr>
<th>Instruction &amp; Departmental Research</th>
<th>Organized Research</th>
<th>Extension &amp; Public Service</th>
<th>Hospital Costs</th>
<th>Other</th>
<th>Total</th>
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<th>Grants &amp; Contracts and USDA</th>
<th>College</th>
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<td>374,608.80</td>
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<td></td>
<td>1,035,087.29</td>
<td>359,504.58</td>
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<tr>
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<th>Instruction &amp; Departmental Research</th>
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<th>Extension &amp; Public Service</th>
<th>Hospital Costs</th>
<th>Other</th>
<th>Total</th>
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<td>153,438.52</td>
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<tr>
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<tr>
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<td>3,415,192.03</td>
<td>1,077,899.36</td>
<td>3,877,145.58</td>
<td>2,378,355.00*</td>
</tr>
</tbody>
</table>

*Includes Federal USDA Appropriations for:
- **Research**
  - Avian Diseases: 8,145.53
  - Large Animal: 14,866.79
  - Microbiology: 7,780.89
- **Extension**
  - Large Animal: 30,793.21
  - Other: 7,437.40

*State Veterinary College*
### COMPARISON OF EXPENDITURES

**Years Ended June 30, 1972 and June 30, 1973**

<table>
<thead>
<tr>
<th>Source of Funds</th>
<th>Year Ended June 30</th>
<th>Increase (Decrease)</th>
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<tbody>
<tr>
<td></td>
<td>1972</td>
<td>1973</td>
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<td>Organized Research</td>
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<td>Hatch</td>
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<td>Other Major Funds</td>
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<td>— Other</td>
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<td>3,733,194</td>
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<tr>
<td>Total</td>
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<td>$7,648,570</td>
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</table>

**Function**

<table>
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<th>Function</th>
<th>Year Ended June 30</th>
<th>Increase (Decrease)</th>
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</thead>
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APPENDIX

TABLE 1

Student Enrollment Projections

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<th>Date</th>
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<th>Totals</th>
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<td>250</td>
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<td>1975</td>
<td>260</td>
<td>60</td>
<td>320</td>
</tr>
<tr>
<td>1980&lt;sup&gt;a&lt;/sup&gt;</td>
<td>305</td>
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<td>405</td>
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<tr>
<td>1985&lt;sup&gt;b&lt;/sup&gt;</td>
<td>384</td>
<td>120</td>
<td>504</td>
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</tbody>
</table>

<sup>a</sup>Assumes entering veterinary class size of 80 starting in 1978
<sup>b</sup>Assumes entering veterinary class size of 96 starting in 1982

Note:
These projections are conditional. They cannot be implemented without expansion of faculty and supportive staff. Also, projections for (b) are dependent upon expansion of physical facilities.

TABLE 2

Faculty* and Staff Projections

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<th>Date</th>
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<th>Non-Instructional</th>
<th>Support Personnel</th>
<th>Staff Total</th>
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<td>55</td>
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<td>346</td>
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<td>1980</td>
<td>68</td>
<td>163</td>
<td>427</td>
<td>658</td>
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<td>1985</td>
<td>84</td>
<td>202</td>
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*Full Time equivalents
TABLE 3

Distribution of Faculty and Professional Staff

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<td>Professors</td>
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</tr>
<tr>
<td>Supervising Veterinarian</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Visiting Fellows</td>
<td>7</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Visiting Staff</td>
<td>2</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Total Ancillary Staff</td>
<td>89</td>
<td>95</td>
<td>83</td>
</tr>
</tbody>
</table>

The non-professional staff on formal appointment totaled 270. Thus, the full complement of appointments for the Veterinary College during the past year was 441 employees. Table 4 shows the ratio of professional to non-professional staff.

TABLE 4

Ratio of Professional to Non-Professional Staff

<table>
<thead>
<tr>
<th>Year</th>
<th>Professional</th>
<th>Non-Professional</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Staff</td>
<td>Staff</td>
<td></td>
</tr>
<tr>
<td>1966-67</td>
<td>160</td>
<td>238</td>
<td>1:1.49</td>
</tr>
<tr>
<td>1971-72</td>
<td>178</td>
<td>252</td>
<td>1:1.42</td>
</tr>
<tr>
<td>1972-73</td>
<td>171</td>
<td>270</td>
<td>1:1.58</td>
</tr>
</tbody>
</table>
TABLE 5

Comparison of Budgets of Selected Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Budget</th>
<th>State Appropriations</th>
<th>Income Funds</th>
<th>Federal and Private Grants and Contracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1959-60</td>
<td>1,798,151</td>
<td>1,277,054</td>
<td>287,097</td>
<td>293,000</td>
</tr>
<tr>
<td>1964-65</td>
<td>3,360,451</td>
<td>1,806,195</td>
<td>513,922</td>
<td>1,040,334</td>
</tr>
<tr>
<td>1969-70</td>
<td>5,575,978</td>
<td>3,132,139</td>
<td>830,612</td>
<td>1,613,227</td>
</tr>
<tr>
<td>1970-71</td>
<td>5,901,473</td>
<td>3,366,156</td>
<td>912,818</td>
<td>1,622,499</td>
</tr>
<tr>
<td>1971-72</td>
<td>6,231,436</td>
<td>3,465,000</td>
<td>1,131,585</td>
<td>1,634,851</td>
</tr>
<tr>
<td>1972-73</td>
<td>7,332,578</td>
<td>3,785,471</td>
<td>1,432,324</td>
<td>2,113,783</td>
</tr>
</tbody>
</table>

TABLE 6

Comparison of Sources of Support in Selected Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent of Total Budget Borne By the State</th>
<th>Percent of Total Budget Borne by Grants and Income Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1959-60</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>1964-65</td>
<td>54</td>
<td>46</td>
</tr>
<tr>
<td>1969-70</td>
<td>56.2</td>
<td>43.8</td>
</tr>
<tr>
<td>1970-71</td>
<td>57.0</td>
<td>43.0</td>
</tr>
<tr>
<td>1971-72</td>
<td>55.6</td>
<td>44.4</td>
</tr>
<tr>
<td>1972-73</td>
<td>51.6</td>
<td>48.4</td>
</tr>
</tbody>
</table>

TABLE 7

Students Enrolled in Veterinary Medicine or Taking Courses in the Veterinary College

Candidates for the professional degree (D.V.M.)

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>59</td>
</tr>
<tr>
<td>1974</td>
<td>59</td>
</tr>
<tr>
<td>1975</td>
<td>62</td>
</tr>
<tr>
<td>1976</td>
<td>65</td>
</tr>
<tr>
<td>Total</td>
<td>245</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1967-68</th>
<th>1972-73</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate students majoring in the Veterinary College</td>
<td>74</td>
<td>43</td>
</tr>
<tr>
<td>Students from other colleges at Cornell in Veterinary Courses</td>
<td>250</td>
<td>599</td>
</tr>
<tr>
<td>Academic Year Institute Students (non-degree)</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Postdoctoral students (non-degree)</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>344</td>
<td>609</td>
</tr>
</tbody>
</table>
TABLE 8
Report of the Surgical and Consulting Clinic
January 1, 1972 to December 31, 1972

The number of cases treated was as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horses and Mules</td>
<td>1,730</td>
</tr>
<tr>
<td>Cattle</td>
<td>636</td>
</tr>
<tr>
<td>Sheep and Goats</td>
<td>139</td>
</tr>
<tr>
<td>Swine</td>
<td>72</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,584</td>
</tr>
</tbody>
</table>

* A detailed report of diagnoses is available from the Director of the Surgical and Consulting Clinic.

TABLE 9
Report of the Ambulatory Clinic
January 1, 1972 to December 31, 1972

The number of animals, examined, tested, vaccinated or treated was as follows:* 

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>30,656</td>
</tr>
<tr>
<td>Horses</td>
<td>2,952</td>
</tr>
<tr>
<td>Sheep and Goats</td>
<td>829</td>
</tr>
<tr>
<td>Swine</td>
<td>860</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>35,297</td>
</tr>
</tbody>
</table>

* A detailed report of diagnoses is available from the Director of the Ambulatory Clinic.

TABLE 10
Report of the Small Animal Clinic
January 1, 1972 to December 31, 1972

The number of cases seen was as follows:*

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dogs</td>
<td>8,880</td>
</tr>
<tr>
<td>Cats</td>
<td>3,514</td>
</tr>
<tr>
<td>Other</td>
<td>150</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12,544</td>
</tr>
</tbody>
</table>

* Due to problems within the recording system the above totals should be increased by approximately 30% to be comparable to data presented in previous Annual Reports. A detailed report of diagnoses is available from the Director of the Small Animal Clinic.
TABLE 11

*Report of the Clinical Pathology Laboratory*

January 1, 1972 to December 31, 1972

<table>
<thead>
<tr>
<th>Source</th>
<th>Type of Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog</td>
<td>Hematology</td>
</tr>
<tr>
<td>Cat</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>Horse</td>
<td>Urinalysis</td>
</tr>
<tr>
<td>Cow</td>
<td>Parasitology</td>
</tr>
<tr>
<td>Other</td>
<td>Microbiology</td>
</tr>
<tr>
<td>Total</td>
<td>Histopathology</td>
</tr>
<tr>
<td></td>
<td>Fluid analysis</td>
</tr>
<tr>
<td></td>
<td>Vaginal smears</td>
</tr>
<tr>
<td></td>
<td>Semen examination</td>
</tr>
<tr>
<td></td>
<td>Cytology</td>
</tr>
<tr>
<td></td>
<td>Bone marrow</td>
</tr>
<tr>
<td></td>
<td>Miscellaneous</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Type of Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog</td>
<td>9,134</td>
</tr>
<tr>
<td>Cat</td>
<td>2,347</td>
</tr>
<tr>
<td>Horse</td>
<td>4,340</td>
</tr>
<tr>
<td>Cow</td>
<td>7,612</td>
</tr>
<tr>
<td>Other</td>
<td>662</td>
</tr>
<tr>
<td>Total</td>
<td>24,095</td>
</tr>
</tbody>
</table>

TABLE 12

*Report of Post Mortem Examinations*

January 1, 1972 to December 31, 1972

The number of necropsies performed was as follows:*

<table>
<thead>
<tr>
<th>Source</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>1,097</td>
</tr>
<tr>
<td>Dogs</td>
<td>528</td>
</tr>
<tr>
<td>Horses</td>
<td>295</td>
</tr>
<tr>
<td>Cats</td>
<td>280</td>
</tr>
<tr>
<td>Sheep</td>
<td>133</td>
</tr>
<tr>
<td>Swine</td>
<td>117</td>
</tr>
<tr>
<td>Others</td>
<td>238</td>
</tr>
<tr>
<td>Total</td>
<td>2,688</td>
</tr>
</tbody>
</table>

* A detailed report of diagnoses is available from the Department of Veterinary Pathology.