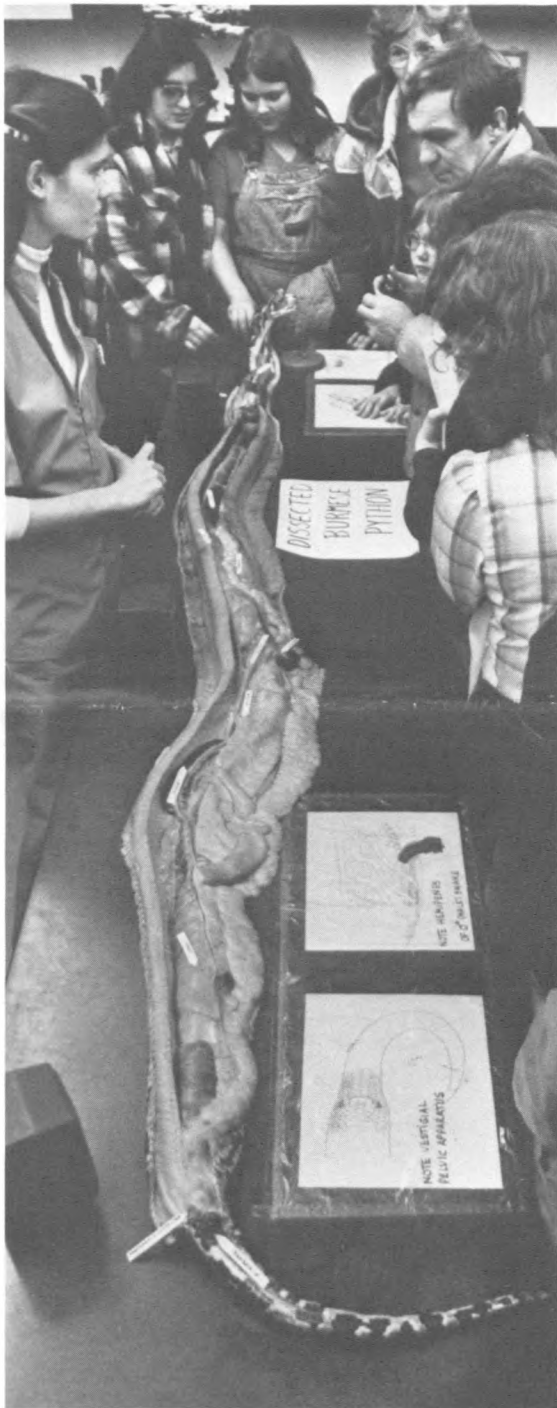


Veterinary Viewpoints

The New York State College of Veterinary Medicine at Cornell University

Spring 1983



Open House

Take 5,000 men, women and children of all ages. Add a boa constrictor, puppies, baby rabbits, Sam the painted horse, poisonous plants, parasites, a cow with a fistula, a 300 lb. pig, nanny goats, sheep, a foal and mother, skeletons, owls, Resuscidog, and jungian gerbils. Distribute all of this throughout Schurman Hall, the Large Animal Hospital and the Equine Research Park. Add hot dogs and soda pop, movies and the veterinary students. Now that's Open House.

The 16th Annual Open House at the New York State College of Veterinary Medicine was held April 16th. As in past years, the attendance was great and the people enthusiastic. Small children especially loved the baby rabbits and the dissected snake. Older visitors favored the fistulated cow, and several brought their own flashlights to get a really good look. Those interested could learn about admission to veterinary school or careers as animal thoroughbred race horses and animal behavior. Anyone could milk a cow, or palpate a uterus, or, if they wanted, look through microscopes at common parasites. There was even a race-

horse's heart to listen to with a stethoscope.

All four classes in the DVM program are involved in the Open House, and it's their show from beginning to end. Back in October, they began by organizing a publicity brochure, then in December and January, they put mailing lists together. By early March, news releases had gone out to every school group, 4-H program and youth organization within 300 miles of Ithaca. In April, food concessions were arranged, space and special requirements noted, signs drawn, and exhibits organized. Most of the students followed a week of exams by staying up all night before the Open House

to clean, construct animal pens, chart traffic flow, and move in animals. Throughout the day, from 9 a.m. to 4 p.m., students took turns at all of the exhibits to demonstrate equipment, answer questions and introduce people to their animals. And it was hard to say who had the best time—our visitors or us.

Alumni Funds Provide Margin of Excellence

In a time of shrinking state support for veterinary education, unrestricted alumni funds have again provided the margin of excellence that has historically characterized the College of Veterinary Medicine at Cornell.

On May 6th the Joint Alumni-Faculty Committee on Unrestricted Funds met to consider proposals for use of the alumni contributions. Their job was not an easy one; they reviewed more than 20 proposals from faculty and staff and selected the most outstanding for funding.

Drs. John D. Murray '39, Robert Manning '55, William Cadwallader '62, Roger Ellis '77, and Pamela Lea '78 represent the Alumni on the committee. Faculty representatives include Drs. Robert Kirk '46, Jim Zimmer '68, William Rebhun '71, Wayne Schwark and Drew Noden. Together they pored over the proposals, seeking those most likely to provide Cornell with the 'margin of excellence'—the goal of the Veterinary College Fund. Specifically, projects were selected to support important and specialized educational needs of professional students and practitioners who return to the campus for continuing education, to develop autotutorial media and media to permit 'at home' study, and to purchase highly specialized new equipment.

Altogether, the committee was able to award \$81,840. This brings the amount of unrestricted alumni funds disbursed since the program began in 1977 to over \$800,000. "The response of the alumni has been fantastic," said Mr. Ralph Jones, Director of Public Relations. "Everywhere throughout the College, one can see the benefits of the alumni's generosity at work in equipment and projects that could not possibly have been supported any other way."

Even so, the need for equipment and support outstrips available resources. Several worthy projects had to be denied for lack of funds. In fact, slightly less than

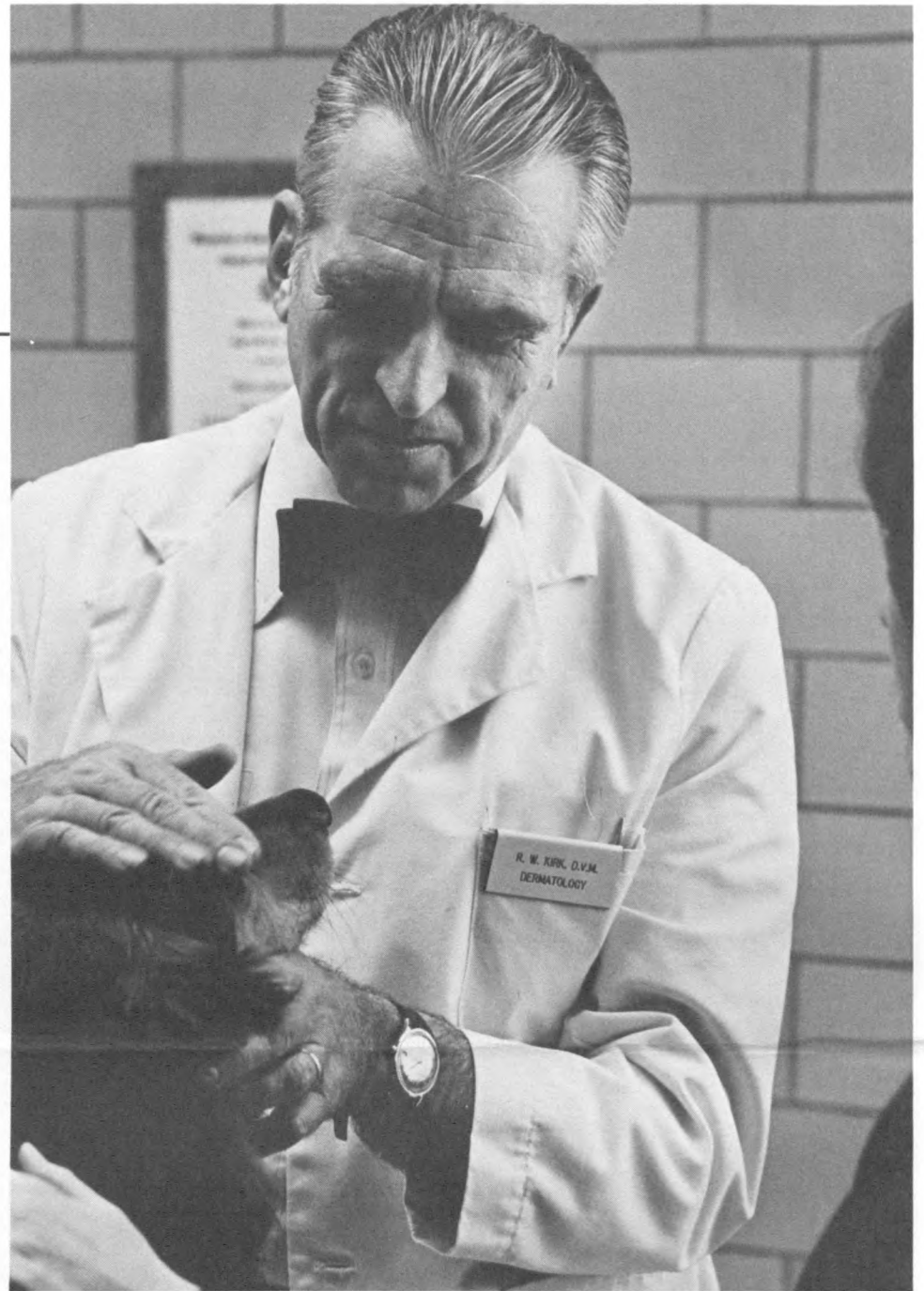
half the amount requested could be supported in this round of funding.

Among the major proposals funded this year were: A real-time ultrasound unit which will markedly expand the Clinics' diagnostic capabilities. Ultrasonography is a non-invasive, safe and remarkably accurate technique for visualizing lesions in body cavities through the imaging of all soft tissue structures. It is expected to be especially useful for the diagnosis of congenital heart defects, bladder and kidney tumors or stones, and heart worms in occult cases, ophthalmologic examinations, the study of mammary glands, evaluation of renal architecture, and many other teaching and clinical applications.

Other proposals funded include an embryo-transfer short course, a spectrophotometer and electrophoretic unit, a special sterilizer for the bovine SPF unit and continuing support for practical computer-aided diagnostic programs.

Other significant projects funded in the past include: a xeroradiographic unit, a retinal camera, an arthroscope, an echocardiography system, a mobile scintillation unit, a cytospin analyzer, audiovisual programs for practitioners, muscle biopsy services, a teaching microscope, micro-computer teaching programs, fiberoptic endoscopy equipment and several small research projects.

Dean Melby praised the foresight and dedication of alumni, "The availability of the unrestricted alumni fund has made it possible for us to maintain our leadership position in veterinary medicine, to push back the frontiers of veterinary research, and to better serve our alumni. The commitment to excellence, and faith in their alma mater embodied in the contributions to this fund serve as an inspiration to us all. I hope all alumni will visit the College often and see their contributions at work. Maintaining a meaningful 'margin of excellence' takes all of us—alumni, faculty, and students—working together toward a common goal. We cannot do it without their support."



Robert W. Kirk, DVM

Dr. Kirk New Director

Robert W. Kirk, DVM, Professor of Medicine in the Department of Clinical Sciences, has been named Director of the Teaching Hospital in the Department of Clinical Sciences. The appointment was announced by Dr. Alexander deLahunta, Chairman of the Department of Clinical Sciences at the College. Dr. Kirk's new position carries with it complete responsibility for the operation and performance of the Teaching Hospital. Mr. Richard Rostowsky, as Assistant Dean for Hospital Administration, will continue to provide the administrative support for the Teaching Hospital as well as the other activities of the Department.

Dr. Kirk received the B.S. degree in Animal Husbandry/Diary from the University of Connecticut. In 1946, he completed the requirements leading to a DVM degree and graduated from the New York State College of Veterinary Medicine at Cornell. The next four years were spent in private practice, followed by two years of service as Captain in the U.S. Air Force.

Dr. Kirk was invited to join the staff of the Small Animal Clinic at the New York State College of Veterinary Medicine in 1952, and he recently celebrated his 30th Anniversary as a faculty member of the College. He has established a national reputation in veterinary medicine as well as veterinary dermatology. He was named Gaines-AAHA Veterinarian of the Year in 1964, and the New York State Veterinarian of the Year in 1971. He is the Secretary/Treasurer of the American Board of Veterinary Practitioners, a Diplomat of the American College of Veterinary Internal Medicine and a member of the American College of Dermatology, and the Academy of Veterinary Allergy. He also serves on the AVMA's Council of Education. Dr. Kirk is the author and editor of numerous publications, including "Current Veterinary Therapy" and the "Handbook of Veterinary Procedures and Emergency Treatment."

Veterinary Viewpoints

Veterinary Viewpoints is published four times a year for friends and alumni of the New York State College of Veterinary Medicine, a Statutory College of the State University of New York. Correspondence may be addressed to Karen Redmond, Editor, Schurman Hall, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853. Telephone: 607/256-7699.

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Cornell Resusci-Dog Debuts

The practice of cardiac massage and ventilation on the human mannequin, Resusci-Annie, is part of thousands of CPR courses across the country. Now, thanks to the efforts of a Cornell veterinary anesthesiologist and NASCO, veterinarians and their associates can demonstrate cardiopulmonary resuscitation on their own mannequin, the Cornell Resusci-Dog.

Resusci-Dog, like Resusci-Annie, is amazingly life-like. It's made of a heavy-duty, yet pliable plastic with a rough coat of tan "fur". Looking like she's stretched out on her side for a nap, Resusci-Dog is ideally positioned for students and clients to feel the electrically-stimulated femoral pulse on the inside of the thigh, and to apply pressure on the rib cage for cardiac massage.

Resusci-Dog is connected by electrical leads to a small box that shows a green light when the correct ventilation pressure is applied. A blue light indicates correct position for cardiac massage and a white light is for correct pressure. A beep and red light indicates excessive pressure. A red light alone indicates misplaced pressure.

The creation of a Resusci-Dog to teach cardiopulmonary resuscitation in veterinary medicine began three years ago when the high cost of teaching animals proved how invaluable the use of animal substitutes could be. Dr. Charles E. Short, Chief of Anesthesiology at the New York State College of Veterinary Medicine, coordinated his efforts and ideas with those of the American Society of Anesthesiologists' training course in cardiopulmonary resuscitation, then approached industry for development.

In 1982, through the support of the Alumni of the New York State College of Veterinary Medicine at Cornell, and the cooperation of Mr. A. E. Haller, Director of Research and Development of NASCO, the project was realistically underway. Specifications for the Resusci-Dog and the details of its intended use were provided by Dr. Short and an original prototype was developed. It was demonstrated for the first time at the January 1983 Conference for Veterinarians at Cornell. Following that trial run, additional modifications were proposed and the present Cornell Resusci-Dog made its debut in March 1983.

The latest model of Resusci-Dog allows placement of an endotracheal tube, practice in assisted breathing, practice in the appropriate rate and pressure and position of cardiac massage and finally, the coordination of the respiratory and cardiovascular functions.

Used in instruction for animal technicians, veterinary students, veterinarians, or other persons responsible for the care of small animals, the Cornell Resusci-Dog will be beneficial in increasing "hands-on" experience and ability. Resusci-Dog may also be used on immediate notice, and eliminates the total dependence on the use of live animal subjects in the teaching of CPR. With the increased cost of research animals, use of the mannequin dramatically reduces the cost of instruction.

Future developments for Cornell Resusci-Dog will include an electrocardiographic simulator to demonstrate cardiac arrhythmias. Modifications to the femoral pulse are also planned so that pulse rate may be connected to heart action in the mannequin. Additional models of the Cornell Resusci-Dog will soon be available from the NASCO Educational Materials Company in Fort Atkinson, Wisconsin.



Dr. Charles Short and Dr. William Horne, Resident in Anesthesiology, demonstrate Resusci-Dog.



Lion-Hearted

A brother and sister team caused a stir in the Small Animal Clinic in January and February. The two, Duke and Dutchess, were lion cubs from the Thompson Park Zoo in Watertown, NY. Duke, a 59 lb. male, was admitted in January with a mangled foot, and his sister Dutchess was originally accused of doing the damage. Not so, said Drs. Eric Trotter and Robert Martin, staff surgeons, the six month old cub probably got his foot caught in the cage and hurt himself yanking free.

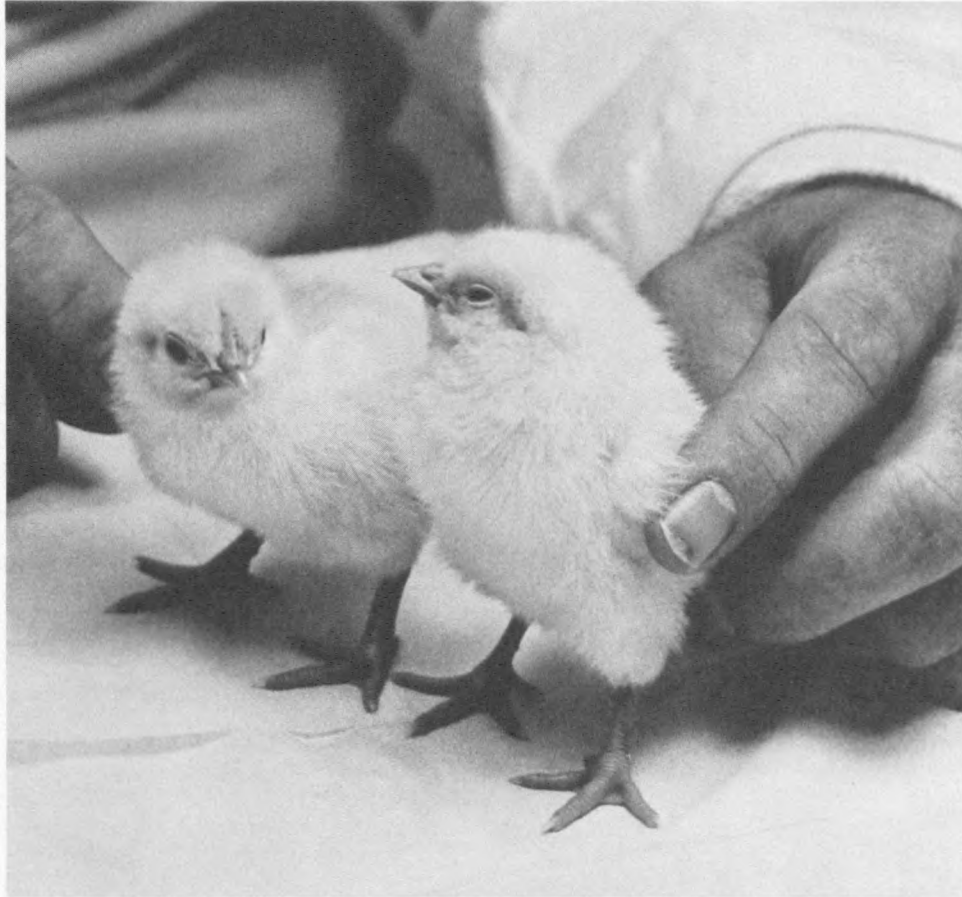
The veterinarians repaired the damage in five hours of surgery, after radiologists found fractures in the radius, ulna and bones of the metacarpi of his left front foot. One badly mangled toe was amputated.

Both Duke and Dutchess returned in mid-February for routine declawing, in hopes of preventing the rambunctious cubs from harming playmates or keepers; Duke

has already lost his tail to his sister's shenanigans. Duke's paw was checked and the bandages removed, then the future King of the Jungle went in for a vasectomy. In zoos around the country, lions are breeding so successfully its hard to find homes for the resulting lion cubs; the Watertown zoo hoped to avoid this problem by planning ahead.

Both cats were friendly and active throughout their stay. Duke was the sociable kind, always ready for company. Dutchess, although older than Duke and outweighing him by about 15 lbs., was the shy sibling and preferred her cage over the relative freedom of the ward.

At this time, Duke and Dutchess are back at the zoo—but in separate cages. Zoo officials hope distance will ensure their continued good health.



When a Two-Part Vaccine is Better Than One

Fried chicken, chicken in the basket, chicken eggs, chicken wings and chicken finger-lickin'-good. The business of keeping a chicken in every pot annually puts \$90,000,000 (gross sales) in the pockets of the New York State poultry industry. That substantial financial incentive coupled with the promise of future demands for poultry products, encourages poultrymen to establish larger flocks in the interests of efficiency. A single farm may house anywhere from 20,000 to 100,000 birds. When a new and deadly infectious disease sweeps through these flocks, the results can be devastating for the poultryman and costly for the consumer.

One such disease, a cancer causing virus known as Marek's disease, once cost the poultry industry millions of dollars. Then vaccines were discovered in 1969 both in this country and in Europe. The most promising of the vaccines contained Herpes Virus of Turkeys (HVT), and until recently its widespread use had largely controlled Marek's disease.

In the late 1970's, however, a steady rise was seen in the incidence of Marek's disease mortality and in the number of slaughtered birds condemned due to Marek's disease, especially in certain geographic areas. There was increased evidence both under laboratory and field conditions of so-called vaccine failures. The reason? The appearance in flocks of new, more virulent strains of Marek's disease virus that overwhelm vaccinal immunity induced by HVT. SB-1, a nononcogenic MD virus strain, isolated in 1975 by Dr. Karel Schat at this college, can also serve as a vaccine against Marek's disease, but it too failed to fully protect chickens against the hot strains of MD virus appearing in some flocks. When researchers at this and other institutions went to work

on the problem, virulent strains were turning up in both broiler and layer flocks in widely separated states. Poultrymen were concerned their losses would soon become staggering.

Drs. Bruce Calnek, Karel Schat, M.C. Peckham and Julius Fabricant of the Department of Avian and Aquatic Medicine, began a field study to determine whether a bivalent vaccine, actually a combination of turkey herpes virus and SB-1, would offer better protection than any single vaccine. Research published by Dr. Schat and his colleagues and by workers at other facilities had already suggested such a possibility. Five field trials involving more than 180,000 chickens resulted. All were conducted in HVT-vaccinated flocks of layer-replacement chickens on commercial farms with a history of Marek's disease vaccine breaks.

In each flock, the normal HVT dose was given on the day of hatching to all chicks, following the vaccine manufacturer's instructions. Researchers administered a bivalent vaccine only to chicks destined to fill the last row or the last pen on each of the farms. This vaccine contained the normal HVT dose along with the SB-1 virus.

Twelve to 16 weeks later it was strikingly obvious that SB-1 *when given in conjunction with HVT* exerted a profound effect on Marek's disease mortality on each of the five farms. Losses due to Marek's were reduced 3 to 13 fold when groups vaccinated with bivalent vaccine were compared with groups receiving only HVT. In addition, rows or pens in close proximity to the chickens who received the SB-1 in their vaccine also experienced low mortality from Marek's disease, apparently as the result of natural spread of the SB-1 virus. After the chickens were transferred to laying houses at 18-20 weeks of age, losses continued to rise in the HVT-vaccinated group whereas the losses in the bivalent vaccine group remained at a low and relatively constant rate.

FIELD TO LAB

The bivalent vaccine field trials were begun primarily as an attempt to resolve the serious MD problem which plagued previous flocks on the subject farms. They do not provide the conclusive evidence for a two-part vaccine that might have been established by a more carefully controlled scientific experiment. While such an experiment would probably have yielded conclusive evidence in favor of the bivalent vaccine, the attempt may also have endangered the flock. But certain facts are still known. Laboratory trials reported by other researchers argue that simply increasing the dosage of HVT does not enhance its efficacy against the more virulent MDV challenge. And trial results give strong support to the contention that vaccines composed of more than

one virus type may indeed offer significantly greater protection than HVT alone against some challenge strains encountered under commercial conditions.

Additional field and laboratory studies are now being conducted to test the efficacy of the bivalent vaccine under diverse conditions and under more controlled circumstances. Dr. R.L. Witter, who received his Ph.D. in the Department of Avian Medicine at Cornell and is now director of the USDA Laboratory in East Lansing, has undertaken field trials with bivalent vaccine involving several million chickens. So far, the bivalent vaccine has proved more than promising. The next step will be the production of experimental lots of vaccine and field trials by federally licensed vaccine manufacturers. Until then, research continues.



NOBEL LAUREATE

The 1982-83 James Law Distinguished Lecturer Series came to an auspicious close with guest speaker and Nobel Laureate, Christian de Duve, M.D. Dr. de Duve spoke on "Some Applications of the Lysosome Concept to Pathology and Therapeutics" to a standing-room-only audience in the James Law Auditorium. Dr. Donald Lindmark (photo left), at one time a research associate of our cele-

brated guest, was host to Dr. de Duve. It is the third year that the James Law Lectures have been offered to the Cornell community and public. The 1982-83 series was made possible through the Annual Veterinary Fund and the generosity of Dr. and Mrs. Isidor I. Sprecker, DVM'39, in honor of Dr. Peter Olafson, eminent veterinary teacher and pathologist.

HONOR DAY

1983

HONOR DAY AWARDS



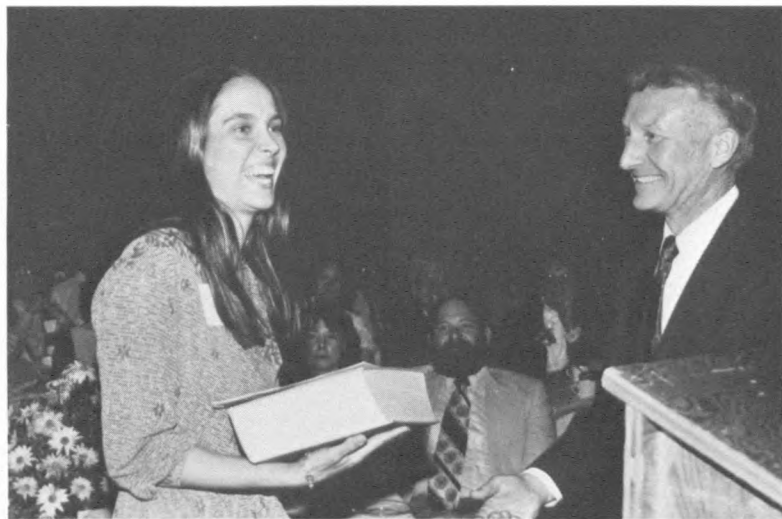
Dr. Schwark receives the Norden Distinguished Teacher Award from Dean Edward Melby.

Distinguished Teacher

Wayne S. Schwark, DVM, was honored as the recipient of the 1983 Norden Distinguished Teacher Award. Dr. Schwark, an Associate Professor of Pharmacology in the Department of Pharmacology teaches Basic Pharmacology, Clinical Pharmacology, and Toxicology. His research interests include neurochemical and neuropharmacological studies of the epileptic disorders and pharmacokinetic studies with drugs used therapeutically in domestic animals.

A Canadian citizen, Dr. Schwark received his DVM and M.Sc. degrees from the University of Guelph and his Ph.D. (Pharmacology) from the University of Ottawa. He joined the faculty of the New York State College of Veterinary Medicine in 1972. He is a member of the American Academy of Veterinary Pharmacology and Therapeutics, the Society for Neuroscience, and the Canadian Veterinary Medical Association.

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| THE HORACE K. WHITE PRIZES | Michael Pollack Charles Lumley Lorraine Doyle Caryl Handelman |
| THE GRANT SHERMAN HOPKINS PRIZE | Christopher Murphy |
| THE NEW YORK STATE VETERINARY MEDICAL SOCIETY PRIZE | Christopher Murphy |
| THE PRIZE OF THE AUXILIARY OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION | Susan Kirschner |
| THE JAMES GORDON BENNETT PRIZE | Kenneth Marcella |
| THE ANNA OLAFSON SUSSEX PATHOLOGY AWARD | Mary Eagle |
| THE MARY LOUISE MOORE PRIZE | Robin Lovelock |
| THE CHARLES GROSS BONDY PRIZE | Caryl Handelman |
| AMERICAN ANIMAL HOSPITAL ASSOCIATION STUDENT AWARD | Michael Pollack |
| THE PHI ZETA AWARD | Roberta Wallace |
| THE MALCOLM E. MILLER AWARD | Ann Harris |
| THE JACOB TRAUM AWARD | Charles Lumley Kenneth Marcella |
| THE P.P. LEVINE PRIZE IN AVIAN MEDICINE | Lysanne Cape |
| THE FRANK BLOOM PATHOLOGY AWARD | Alan Schulman |
| THE JANE MILLER PRIZE | Roberta Wallace |
| THE ANNE BESSE PRIZES | David Brooks David Sandefer |
| THE DONALD D. DELAHANTY MEMORIAL PRIZE | Ann Dwyer Richard Doran |
| THE MERCK MANUAL AWARDS | Colleen Cottrell Daniel Simpson |
| PHILOTHERIAN PHOTOGRAPHIC AWARD | Cory Brayton James Brown |
| THE GENTLE DOCTOR AWARD | Ann Harris |
| AMERICAN ASSOCIATION OF FELINE PRACTITIONERS AWARD | Paul Rudenberg |
| THE A. GORDON DANKS LARGE ANIMAL SURGERY AWARD | Richie Dubensky |
| HILL'S AWARD FOR EXCELLENCE IN CLINICAL NUTRITION | Richie Dubensky David Waters |
| THE MYRON G. FINCHER PRIZE | Norman Woodworth |
| THE GARY BOLTON MEMORIAL CARDIOLOGY AWARD | Paul Pion |
| SHEIDY PRIZE FOR PHARMACOLOGY | Robin Lovelock |
| THE WILD BIRD RESEARCH & REHABILITATION AWARD | Christopher Murphy |
| THE NORDEN DISTINGUISHED TEACHER AWARD | Dr. Wayne S. Schwark, DVM |





"Who's Who Key on Next Page"

Dedication

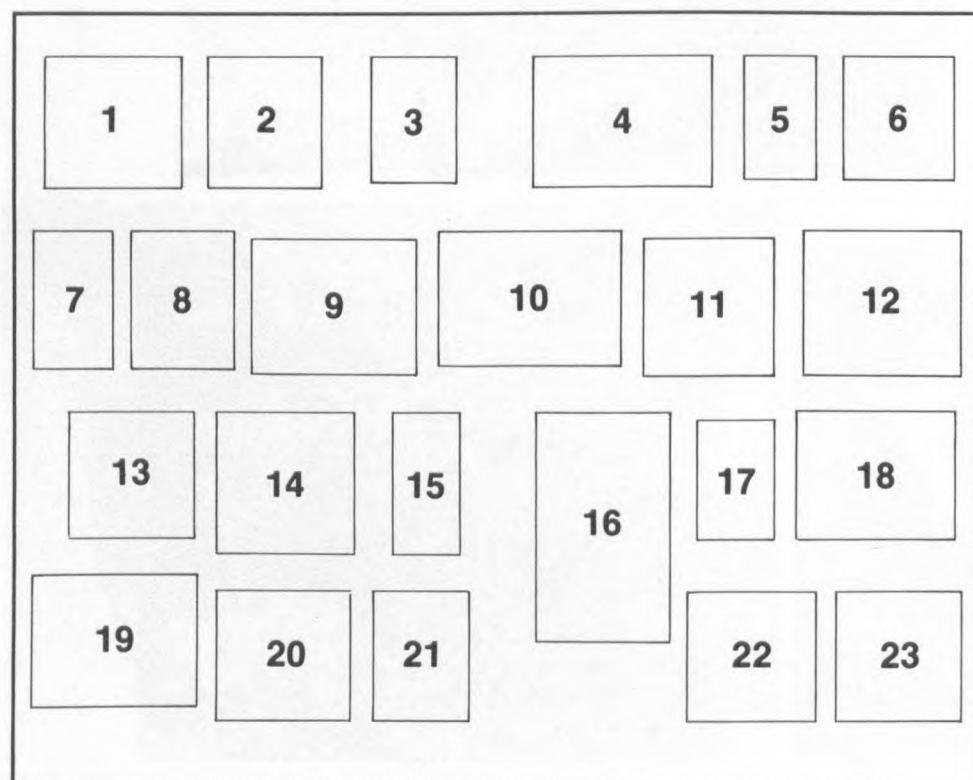
[The 1983 Yearbook of the New York State College of Veterinary Medicine was dedicated to two faculty members by the Class of 1983. The following message appears in the book's opening pages.]

"It is difficult to think of two more different people than Dr. Fox and Dr. Harvey. Mere observation alone makes the differences obvious. One is short and thin, one is large and round. One is quiet, soft-spoken and treats clients, students and patients all with the same gentleness. One is loud, gruff and belligerent with just about everyone.

Yet, outward appearances and unique characteristics aside, there is a common bond shared by these two men. Both Dr. Fox and Dr. Harvey care . . . about teaching, about students, about the profession. In their own ways, with their own unforgettable styles, these two men have taught us about using our eyes, our ears, our hands and our hearts in our work. It is because of their concern and efforts on our behalf that we dedicate this yearbook to Dr. Francis Fox and Dr. Jay Harvey.



Drs. Jay Harvey and Francis Fox receive yearbooks at Honor Day exercises from editors Kenneth Marcella and Susan Hensen.



WHO'S WHO KEY

1. David Sandefer
2. Ann Dwyer
3. Robin Lovelock
4. Lorraine Doyle
5. Charles Lumley & Caryl Handelman
6. Kenneth Marcella
7. Richie Dubensky
8. Ann Harris
9. Roberta Wallace
10. Richard Doran
11. David Waters
12. Colleen Cottrell
13. Susan Kirschner
14. Lysanne Cape
15. Christopher Murphy
16. Paul Rudenberg
17. Paul Pion
18. Alan Schulman
19. David Brooks
20. Norman Woodworth
21. Mary Eagle
22. Daniel Simpson
23. Michael Pollack

A Tankful of Fish

Of all animals, fish make the best pets—
Because long before you get tired of them,
they die.

attributed to Archie Bunker

by Kenneth Marcella '83

Anyone whose childhood memories include bowls with goldfish sporting fuzzy spots or cloudy tanks with surface-floating guppies will probably agree with the last half of Archie's philosophy. Raising aquarium fish can be a relaxing, rewarding hobby and it can be a frustrating experience as well.

Tropical fish are perhaps uniquely sensitive to their watery environment. When man attempts to recreate this natural environment within the confines of an aquarium tank many factors must be attended to for happy, healthy fish. One of the most popular misconceptions is that of the tank as a biological equilibrium on a very small scale. Many people think that plants in the tank supply oxygen to the water for the fish to breathe and that waste products from the fish provide the plants with the necessary nutrients. Another common misconception is that a few shakes of fish food a day will allow the tank to take care of itself. Actually this oversimplified view is only one small part of the entire process. Calculations have shown that for a tank to be truly self-sufficient it would have to contain 200 liters of water, be well-planted, and well-illuminated. It could then support a single guppy. Obviously most hobbyists prefer a few more fish in a smaller volume of water, so items such as a fresh oxygen supply, water heater and filters must be added to help maintain the biological balance. Even with these additions, there are potential problems when fish are kept in tanks.

Ammonia constitutes 80% of the nitrogen containing waste excretions of most fish. Ammonia itself is very toxic to fish and consequently a process called nitrification has evolved in which ammonia is converted to a non-toxic substance, nitrate, in two steps. Different types of bacteria work in each of the two steps and the presence of both is equally important. Nitrification is a natural process that occurs everywhere from forest floors and ocean bottoms to your fish tank. Abnormalities in the nitrification process produce a condition known as "New Tank Syndrome" that kills more fish each year than any single infectious disease.

Generally the average aquarium-keeper begins losing fish to the syndrome two to four weeks after setting up a new tank. The problem arises because too many fish are introduced into a new clean tank which lacks bacteria. These fish produce high volumes of ammonia-containing waste products. Since the bacteria needed for the first step of nitrification are not present, the ammonia is not converted and soon toxic levels develop which kill fish. The rising ammonia level however, stimulates bacterial growth and eventually there are enough bacteria to convert ammonia into the first step product—nitrite. Nitrite is also very toxic and any fish surviving ammonia toxicity usually succumbs to nitrite poisoning. As before, the

rising nitrite concentration stimulates appropriate bacterial growth and, finally, the nitrites are converted to harmless nitrates. Unfortunately, by this time most of the fish are dead.

"New Tank Syndrome" can be treated by simply changing 25% of the tank water daily until the nitrification process has become established. Prevention can be achieved by three steps. First, add fish slowly to a new tank, i.e. for a 10 gallon tank, add no more than two small fish each week. Second, obtain a handful of gravel from a well-established and disease-free tank. This will effectively "seed" the needed bacteria into the new tank. This must be done every time you clean your tank as well. While cloudy water and a dirty tank stress fish and are an invitation to disease, scrubbing your tank squeaky clean and refilling it with clean water every few weeks can also be deadly. Every time you change the tank, remember to add in some of the bacteria with gravel from your tank bottom. And finally, you may artificially stimulate the process by adding ammonia and nitrite salts to your aquarium. These salts stimulate bacterial growth so that the nitrification process can begin, but as these salts can also be toxic, caution should be exercised when they are used and label instructions followed closely.

Fish are susceptible to tumors, poisoning, various viruses and bacteria. Most bacteria are of the gram negative variety and are sensitive to any number of antibiotic preparations available from your veterinarian or pet store. Fungal diseases are also common and are especially prevalent in injured fish. Injured fish are also believed to be the

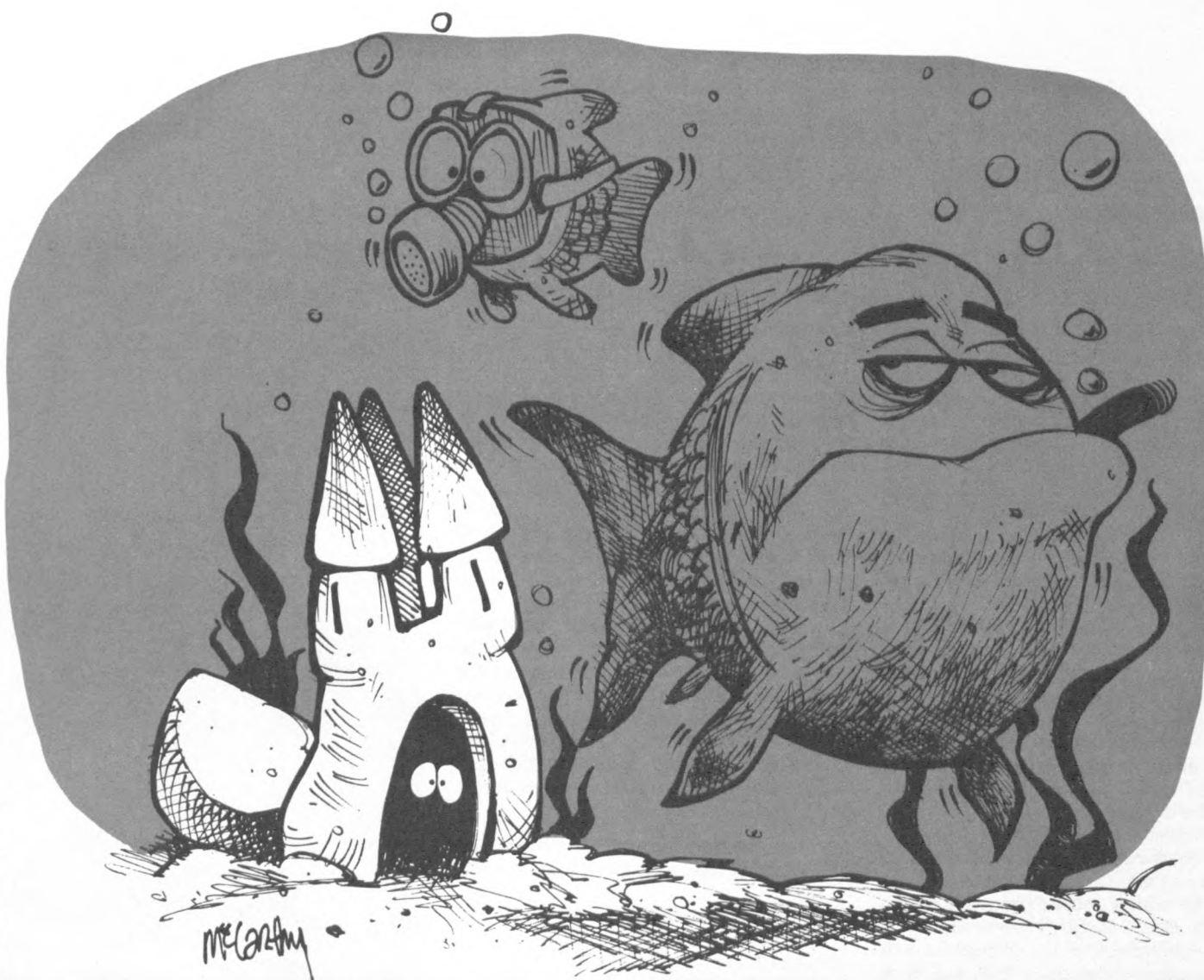
causative agents of "Fright Behavior". In such behavior, a tankful of fish, usually of the same or similar species, goes wild, dashing around the tank, often jumping out, bumping into walls and occasionally killing themselves. An understanding of "Fright Behavior" requires a close look at fish skin. There are two types of cells in most fish skin. Slime cells open on the skin via pores and produce a slimy protective covering. Club cells are normally not open to the skin but contain what has been called "fright substance". When a fish is injured, these club cells come in contact with the surface and the fright substance is released into the tank. It is believed that fish can smell or "sense" this substance and that the resulting fright behavior is a natural adaptation in the wild to protect the remainder of a school of fish from harm when one fish is injured by a predator. This "fright substance" has only been found in one major group of fish and the available information does not explain why such behavior is occasionally seen in tanks where no fish have been injured. Plainly much research remains to be done on this interesting behavior. Currently, there is no known treatment except to reduce the numbers of fish in the tank and change the water.

Algae can cause many diseases of fish, the most common of which is Rust or Velvet disease. This disease attacks almost any type of aquarium fish, covering them with a fine dusty material growing over fins and the body. A mild infection can be easily missed but in more serious infections, this rust-like material can be detected by shining a bright light on the fish. The disease can be treated by adding copper sulfate to the

tank water. Since copper sulfate can also be toxic, strict attention should again be paid to label directions.

Protozoa are single-celled organisms and perhaps the most notorious is *Ichthyophthirius multifiliis* which is the cause of Ich. Ich (pronounced "ICK") is a very common disease that can affect any type of fish anywhere in the world. The skin of fish with Ich is invaded by protozoa that burrow just below the surface and continue to live there. Affected fish have white spots on their bodies and fins and these spots can sometimes grow to be quite large. This disease can be treated by adding a substance known as Malachite green to the tank water. Certain fish species are very sensitive to Malachite green, but while other drugs are available, none work as well.

Most fish problems, including Ich and Rust, are the result of a dirty tank which stresses fish and makes them more susceptible to any of the disease agents present in their environment. The best preventive medicine for tank fish is good care in a clean, non-stressful environment. Don't overstock your tank. Keep it clean but be aware of the nitrification needs of your fish. Provide a population of snails to clean up the debris and to filter out the tank's bottom layer. Choose your species of fish wisely, feed them properly and observe them closely enough to notice early warning signs of disease and treat them effectively. Many good books have been written on the care of aquarium fish, so visit your local library. With a little knowledge, lots of care and attention, and some luck, you can enjoy an attractive, healthy and rewarding tankful of fish.



Dr. Wes Linqvist

Wesley Linqvist, DVM has a lot of problems. You might say he has made a career out of them. His particular kinds of problems are in dairy herds scattered in Central New York State and into Pennsylvania and they range in size from one cow to a whole herd. As Supervising Veterinarian for DCS-Mastitis Control Program, Dr. Linqvist and his crew of technicians and veterinarians are in the business of helping dairymen clear-up their herd's infection problems, keeping the somatic cell counts low and, along with everything else, increasing the herd's production so more milk can go to market. It is his conservative guess that each year Mastitis Control visits 15% of the dairy farms in New York State.

Dr. Linqvist has solved dairy problems daily for 25 years starting in 1958 as a Field Veterinarian for Cornell. When he first started, he was a recent graduate of the New York State College of Veterinary Medicine, straight from one year of practice with Dr. L. Lindsay in Buffalo, NY. A call from the College started him in mastitis control at the Kingston Laboratory in eastern, New York. Then, after two years, he was doing the same job at the Amsterdam Lab. Ten years later, when they closed the labs at Amsterdam and East Aurora, Dr. Linqvist returned to Ithaca to work with students at the College. It's his opinion that without the students, the next 13 years would not have been so interesting.

Dr. Linqvist takes a special interest in every farm in the program and he makes at least one trip to every herd to see, first-hand, how the farm operates. To him, problem herds are challenges. He recalls working with some of the more troubled farms in the 70's; for many, the Mastitis Control Program was their first attempt at herd health. Typically, after the program would bring the infection under control and the bacterial count down, they'd want to get started on other problems in breeding or nutrition. From milking 12,000 or so pounds, they'd go up to 18,000 or 19,000 under the Mastitis Control Program, a real improvement. Times have changed, however. Dr. Linqvist sees a slow down in the calls made this past winter, usually a busy time, as a reflection of the economic plight of the dairyman. Unfortunately, those who can least afford it probably need the benefits of the program most.

Dr. Wesley Linqvist and his wife Gen have raised five children and put three through College. Their oldest daughter and a niece married brothers and have opened a bakery in Maine. The Linqvist's youngest son works there too. Another son is in the Air Force and is stationed in Oklahoma. One daughter teaches special education in Albany, and another daughter is at home. With the family spread out, it was hard to keep up with grandchildren and other impor-

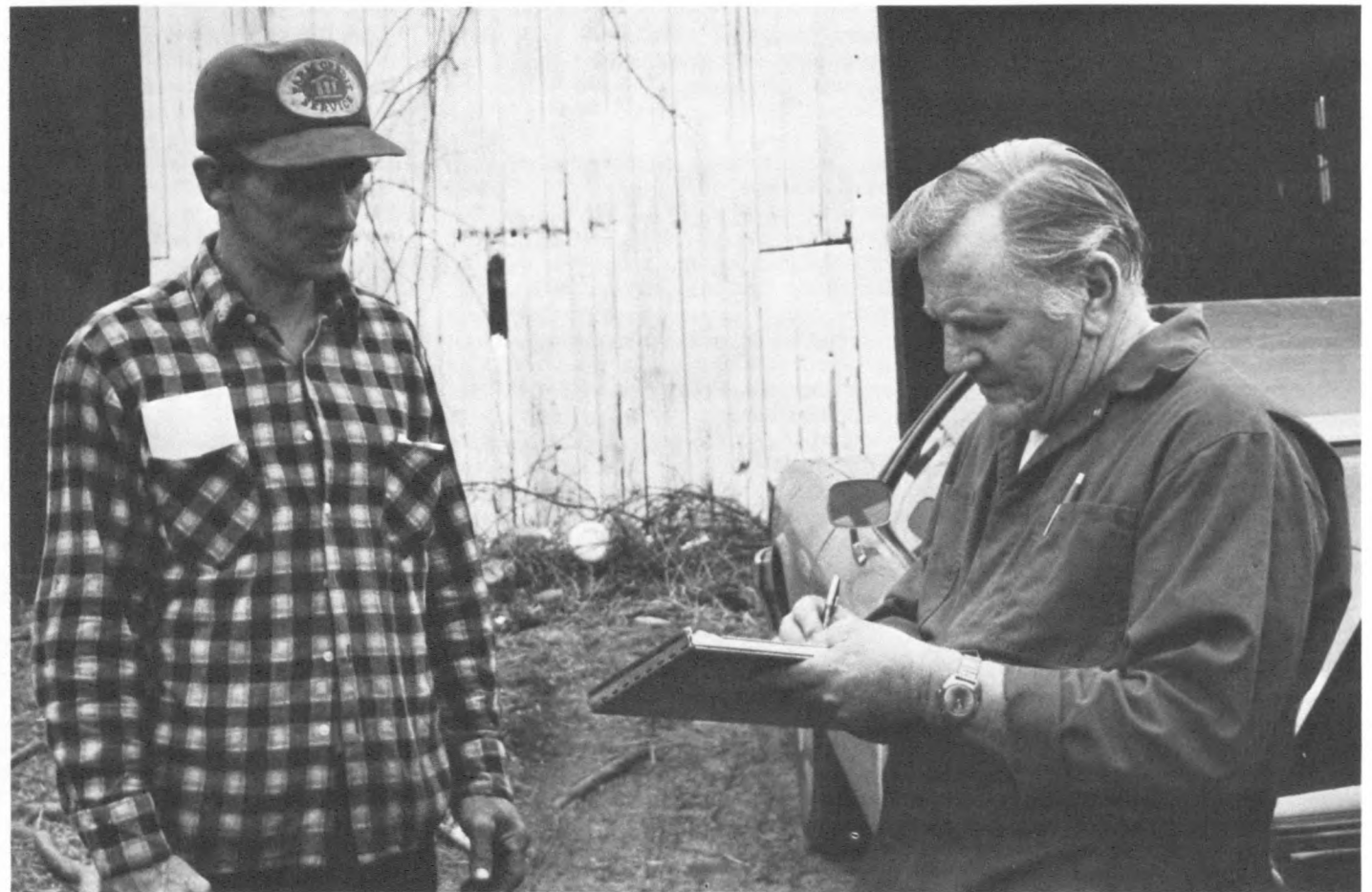
tant events but, being an experienced problem solver, Wes Linqvist had the solution. On May 4th 1983, after 25 years in the Mastitis Control Program, he retired.

But retirement may be brief because Dr. Linqvist already has a job lined up. And, yes, it's in his favorite field. Plans are to move to New Hampshire, within easy reach of the children, and begin work as a consultant on vacuum systems.

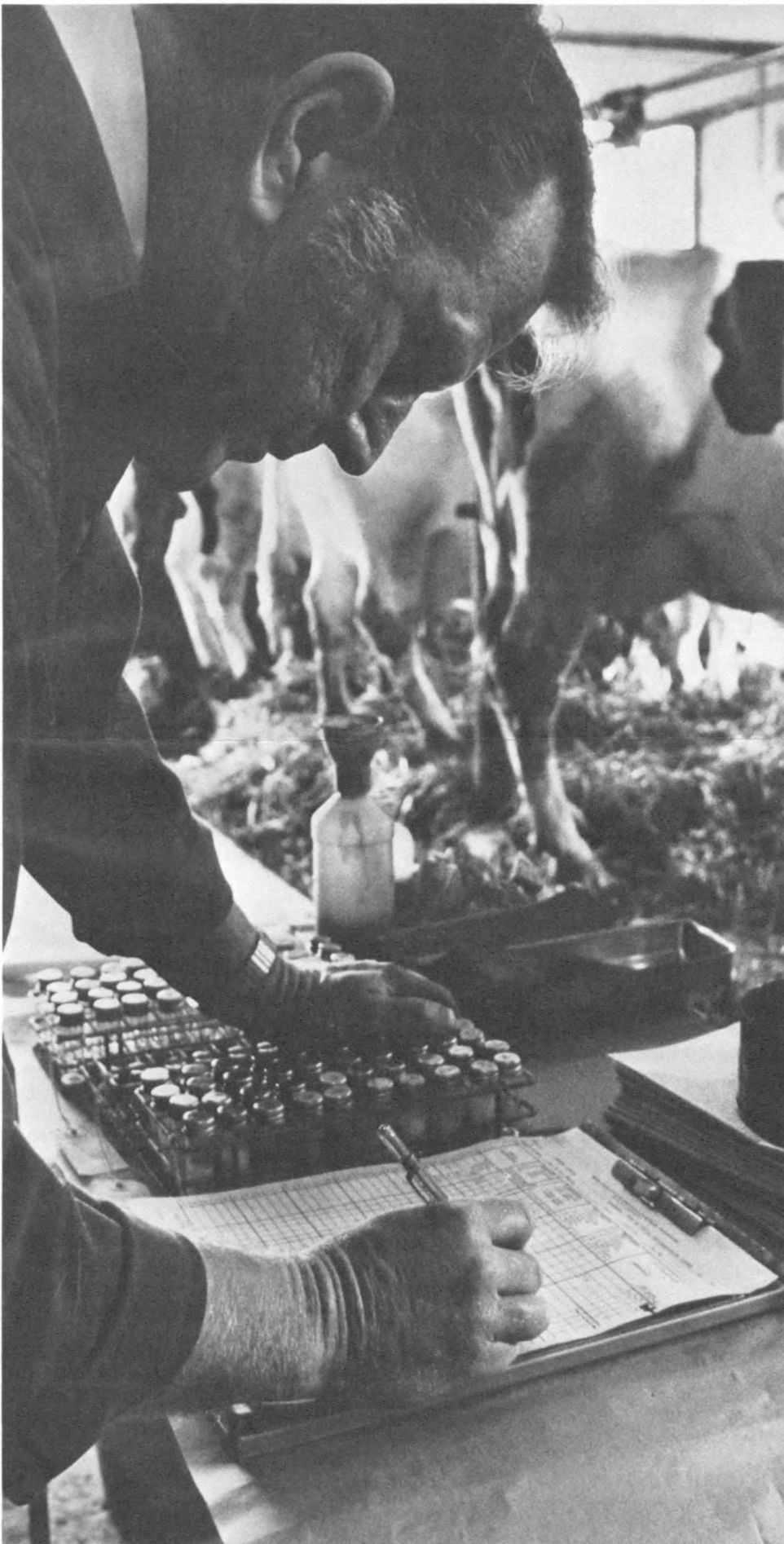
Looking back on his many years with Cornell he has a few regrets; he never did get the recipes for his favorite sticky buns at the diner in Bath, NY, or for the cinnamon buns at that place outside of Elmira. Fortunately, his eldest daughter's bakery will only be an hour away when he retires, and he says their bread and rolls are wonderful. Good luck, Dr. Linqvist!



Wes & Gen Linqvist



FOOTNOTES



W. Linquist, DVM

AAHA AWARD

Dr. Leland E. Carmichael, Scientific Director of the James A. Baker Institute for Animal Health, has received the Award of Merit from the American Animal Hospital Association. The Award was in recognition of Dr. Carmichael's continuing efforts in research and for increasing the profession's knowledge of canine viral diseases.

Grants Look at Disease & Ion Channels

Two new research programs in the Pharmacology Department have been funded recently by the National Institutes of Health.

Dr. Geoffrey W. G. Sharp, Chairman of the Department of Pharmacology, was awarded a grant of \$425,000 by the National Institutes of Arthritis, Diabetes, Digestive & Kidney Disease, NIH, for study over a 4 year period of diarrheal diseases and the role of calcium in the regulation of active intestinal electrolyte transports. Correlation of the phosphorylation of specific proteins with changes in intestinal ion transport may be possible as a result of these studies. These studies should contribute to the goal of understanding the mechanisms and control of absorption and secretion in intestine, and the ultimate goal of modifying active intestinal transport in such a way as to be useful in the therapy of diarrheal diseases.

Dr. Robert Oswald, also from the Department of Pharmacology, was awarded a \$107,000 grant by the National Institute of Neurology and Communicative Disorders and Stroke. His work will focus on non-competitive blockers of the acetylcholine receptor. The receptor plays a major role in the communication between nerve and muscle. The studies using the acetylcholine receptor from the electroplaque of electric fish, are designed to explore the mechanism of action of noncompetitive blockers or agents that block responses to acetylcholine without interacting with the acetylcholine binding site. Skeletal muscle acetylcholine receptors are of considerable interest due to their potential role in the formation of stable contacts between nerve and muscle cells and their role as the major autoantigen in myasthenia gravis. In addition, these studies will be of general interest to the understanding of neuromuscular disease and of deervation neuromuscular diseases.

Sloan Fellow Selected

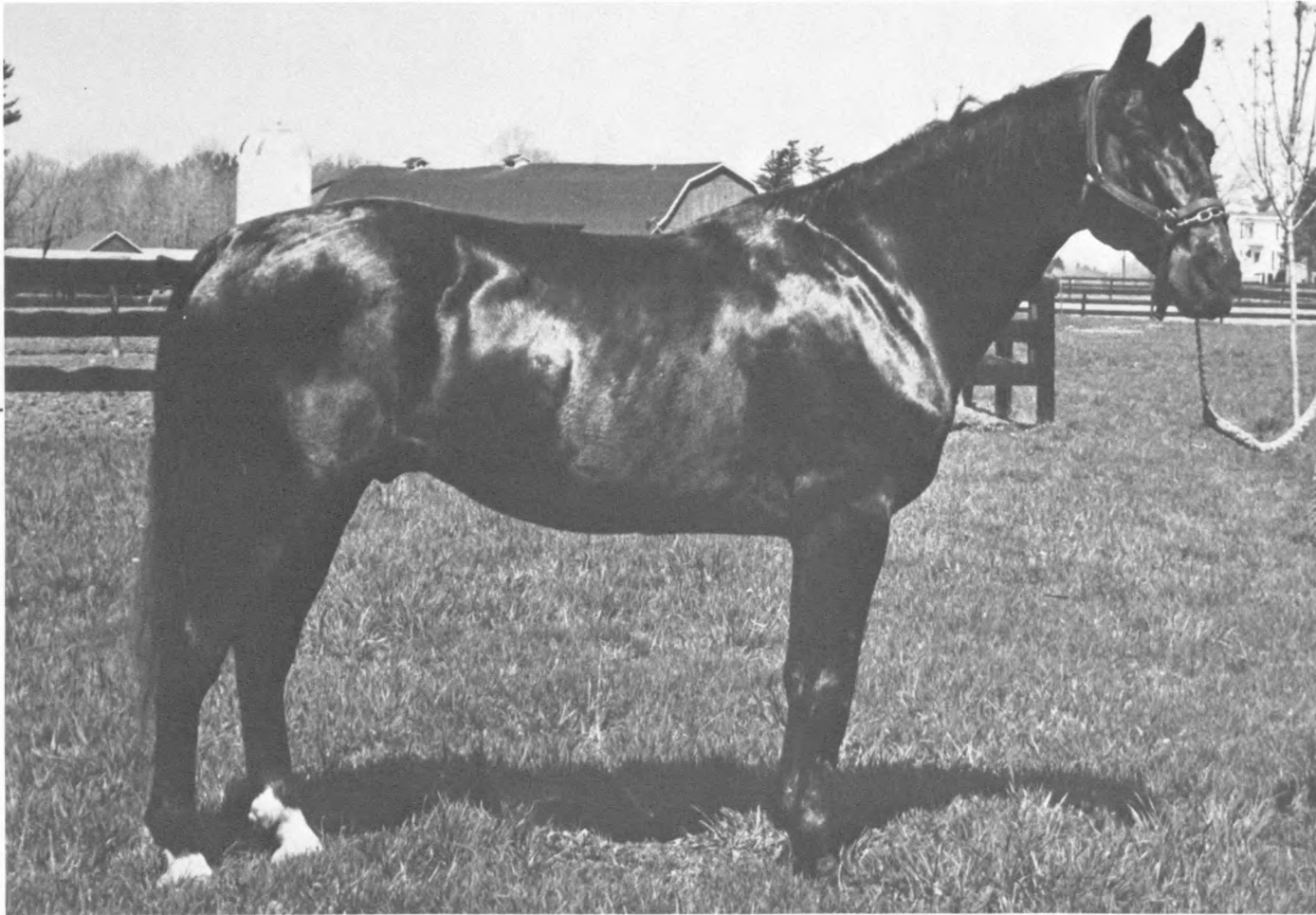
Dr. Robert E. Oswald, Assistant Professor in the Department of Pharmacology was recently selected to receive a Fellowship of \$25,000 from the Alfred P. Sloan Foundation. The two-year grant will support continued research in neuroscience.

Sloan Research Fellowships were established by the Alfred P. Sloan Foundation in 1955 as a means of stimulating fundamental research by young scholars. For the 1983 awards, researchers were chosen on the basis of their exceptional promise to contribute to the advancement of knowledge in the early stages of their careers. Their interests include chemistry, economics, pure and applied mathematics, neuroscience and physics. Fellows need not pursue a specified research project and are free to shift the direction of their research at any time. Ten former Sloan fellows have gone on to become Nobel laureates.

Dr. Robert E. Oswald received a B.S. degree in Chemistry and M.A. degree in Psychology from the University of Alabama. In 1979, he earned a Ph.D. in Biochemistry from Vanderbilt University. While in predoctoral studies at Vanderbilt, he began work on the central nervous system acetylcholine receptors and optic nerve neurotransmitters. In 1979, he joined the laboratory of Jean-Pierre Changeux at the Institut Pasteur, Paris, France as a Postdoctoral fellow of the Muscular Dystrophy Association and the College of France, to study the structure of the acetylcholine receptor-ionophore complex. Dr. Oswald is co-author of numerous publications dealing with optic nerve neurotransmitters and with nicotinic acetylcholine receptors both in the brain, and in specialized organs of electric fish.

ANOTHER BIRTHDAY

The Junior Class upheld tradition by celebrating the March 11th birthday of Francis H. Fox, DVM, with the usual skit. The skit was a spoof of "Fantasy Island", featuring Dr. Fox's favorite fantasy, dancing people, a few musical numbers and an imitation of a midget. Later, Dr. Fox made a tour of the college in "the plane, the plane", then joined students and faculty for a quiet birthday party in T Barn. Party decorations, also by the Junior Class, included a "fantasy island" mountain complete with waterfall.



Speedy Rodney

Top Trotter at Cornell

SPEEDY RODNEY, a well-known trotter at the racetrack, is a recent addition to the Equine Research Park program at the New York State College of Veterinary Medicine. News of the stallion's donation was announced by Morton Finder, President of the Pine Hollow Stud Farm and corresponding officer for the SPEEDY RODNEY Syndicate, and Dr. Matt J. Kemen of the College of Veterinary Medicine. Shareholders in the syndicate are Lester Bernstein, Phil Tully, Art Dana, Mrs. John Wehle, Madawaska

Farms, Joe Thomson, Gerry Munroe, Joseph Angiolillo, Bunny Stables, Norman Dauplaise, Jesse Farrow, Myron Finkelstein, David Geller, Harriet Ehrlich and Pine Hollow Stud Farms.

In his racing career, SPEEDY RODNEY won such prestigious events as the \$100,000 United Nations Trot, the Gotham Trot (twice) and the Titan Cup. In 1966, he established a world record for aged trotting stallions when he toured the Yonkers Raceway halfmile oval in 1:58.3.

At the Equine Research Park, SPEEDY RODNEY will be part of the College's breeding program and will also stand to

outside mares for a fee of \$2,000. His fertility has been excellent at the Park. The stallion has already sired world champion and Hambletonian winner, GREEN SPEED, European Champion WAYNE EDEN, FFA star TOWN ESCORT, and NYSS winners SPIRIT'S SUPREME, DRIBYDAL and WALTER BE GOOD. One of his daughters has produced world champion INCREDIBLE NEVELE, 3,1:56h(1982). All foals resulting from the breedings at Cornell University will be eligible for nomination to the New York Sire Stakes program.

The reproductive program at the Equine Research Park is concerned with both

teaching and research. Students learn the daily duties of an equine practitioner, collect stallions, palpate broodmares, check for fertility problems and maintain herd health records. Reproductive studies research concerns the problems of stallion and mare fertility, pregnancy detection, foaling, prenatal and postnatal care, and diseases of the foal. Research is supported in part by the stud fees of the Thoroughbred and Standardbred stallions housed at the Park.

VETERINARY VIEWPOINTS

The New York State College of Veterinary Medicine
Cornell University
Ithaca, New York 14853