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**Nurses for Animals**

The comfort of patients and the smooth functioning of a hospital depends very much on a skilled nursing staff. This not only applies to a human hospital but also to an animal hospital. At the two facilities of the School of Veterinary Medicine, VHUP and New Bolton Center, the four-legged patients are cared for by a trained, full-time nursing staff. The nurse-technicians at both hospitals are state certified and have extensive training in animal care. Their charges range from small exotic birds to giant dogs at VHUP, and from lambs to stallions at New Bolton Center. Each hospital has facilities tailored to the special needs of its patients.

At VHUP hospitalized animals are cared for in wards on the third floor of the new hospital. At New Bolton Center patients are accommodated in barns. VHUP's patients are housed in large stainless steel cages or in runs, depending on their size. This facility is divided into wards. At New Bolton Center the animals are housed in large stalls; there are five barns which serve as wards, four for equines and one for bovines.

Each hospital also has a full-time cleaning staff. At VHUP cages are cleaned and disinfected daily. The stalls at New Bolton Center are cleaned daily. Here the feeding of the animals is handled by the nurses' assistants, at VHUP the nurse-technicians feed the patients.

Both hospitals have a director of nursing. Carole Contel, who is in charge of the intensive care unit at VHUP, directs the nursing staff. This does not include the nurses on duty in the operating rooms, who are under the supervision of Edna Wooters, R.N. At New Bolton the director of nursing is Sue Lindborg. Her staff not only works in the wards but also rotates through the operating rooms and the clinics.

“We have five full-time nurses here in the ward,” said Tinamaria Gilbert, head nurse and staff nurse supervisor at VHUP. “The nurses are on duty during the day in the wards and around the clock in the intensive care unit. During the night students and nurse-technician students from Harcum Junior College are on duty in the wards. The Harcum students work with us during the day and we train them.”

New Bolton Center’s nurse-technicians are on duty from 8 a.m. until midnight. “For intensive care cases we call in one of the three intensive care nurses who works part-time,” said Sue Lindborg. The nurse-technicians at both hospitals have a multitude of duties. “Our nurses give general nursing care, they give medication, physical

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**Penn Annual Conference—1984 Change of Date and Location**

The new dates for the 1984 Penn Annual Conference are Thursday and Friday, January 26 and 27, 1984. The new location is the Franklin Plaza Hotel, Two Franklin Plaza, Philadelphia, PA. For further information contact: Ashra Markowitz, School of Veterinary Medicine, University of Pennsylvania, 3800 Spruce Street, Philadelphia, PA, 19104. Call (215) 898-4234.
**NURSES FOR ANIMALS**

(continued from cover)

therapy, draw blood and handle tests," said Ms. Gilbert. "They make sure that the animal is fed, exercised, groomed and bathed and is comfortable." At New Bolton, in addition to the nursing care, duties include preparing the animal for surgery and, when assisting in the operating room, gowning the surgeon and handing instruments during surgery.

At VHUP the wards are divided into sections, each with a nurse who is responsible for her ward. There are two medical wards for non-surgical cases such as patients admitted to dermatology, neurology and the like. There is an orthopedic ward which, in addition to cages and runs, has a special treatment room with a whirlpool and waterbeds for animals which must remain prone after surgery. Soft tissue patients have a separate ward as have exotic animals. The space for the latter can be kept at higher temperatures and the humidity can be adjusted to suit the needs of the patients. Animals requiring semi-intensive care are housed in the fluid therapy ward and those in critical condition are placed in the intensive care unit. This facility is equipped with oxygen cages, an EKG monitor and other sophisticated equipment. VHUP also has an isolation ward, a totally self-contained unit. "We have separate equipment and supplies here in each of the three units of the ward," said Ms. Gilbert. "Our laundry is kept apart from that of the general ward and we wear disposable gowns and gloves when we enter each section. One section is for animals with contagious diseases, one is for animals with parvovirus disease and the third is for animals suspected of having parvovirus disease. When we leave the unit we have to use a foot bath and spray ourselves to prevent contamination of other areas of the hospital."

In addition to the wards the floor also houses special areas for oncology patients and for animals treated with radioactive materials. There is also a special quarantine section. Spaced between the wards are large treatment rooms where patients are taken for treatments, bathing or grooming.

The nurse-technicians at VHUP, like their counterparts at New Bolton Center, monitor the animals and report any changes to the clinician in charge. "This is true not only for the intensive care unit but for patients in the other sections as well," explained Ms. Gilbert. "We keep in close contact with the clinician in charge."

"Some of our IV fluid jugs hold twenty liters and it takes two people to hoist these up high enough so the drip functions properly."

While the activities of the nurse-technicians at VHUP are concentrated on the third floor of a building, nurse-technicians at New Bolton Center frequently brave the elements while rushing between the barns, Widener Memorial Hospital and the nurses' station. The nature and the size of the patients often requires a lot more physical exertion. "We hold horses and cattle and help to move them around," said Mrs. Lindborg. "Some of our IV fluid jugs hold twenty liters and it takes two people to hoist these up high enough so the drip functions properly." Nurse-technicians at New Bolton also have to handwalk or handgraze horses. This means being exposed to all kinds of weather. "In the winter it gets really cold, particularly if you sit with an animal while on intensive care duty."

The nursing staff at New Bolton Center, numbering ten, rotate throughout the entire facility. Handling the large patients requires different skills than those needed for the animals at VHUP. "Most of our nurses have equine backgrounds," said Mrs. Lindborg who herself is a certified assistant riding instructor. "In pediatrics, when the foal is the patient, the mare comes also and we have to care for both," she explained. "Mares are very maternal and great care has to be taken when the foal is removed for surgery. Often the mare has to be tranquilized because she gets so worried."
New Bolton Center has an isolation area for animals suspected of contagious diseases. It does not have an intensive care unit as such. "Intensive care takes place wherever the animal is," Mrs. Lindborg explained. "We move the equipment and fluids needed and then stay with the animal around the clock."

The nursing staff at New Bolton Center, like the staff at VHUP, is assisted by student technicians from Harcum Junior College. "They are here for seventeen weeks and we train them in large animal care. Just like they are trained in small animal care at VHUP," said Mrs. Lindborg. "These are necessary to keep our license in force."

The nurse technicians enjoy their work and the interaction with animals and clinicians. "We can take care of a lot of routine work and tests," said Ms. Gilbert. "This frees the clinicians to see more cases." Both Mrs. Lindborg and Ms. Gilbert feel that the nurse-technician has a vital role in modern veterinary medicine. "The students and clinicians are very used to competent nursing care provided at the hospitals," said Mrs. Lindborg. "When they go into practice they will be looking for people trained like the nurse-technicians at VHUP and New Bolton Center."

The animals at both facilities are in good hands, benefitting not only from the advances made in veterinary medicine but also from the skilled care and monitoring provided by the trained staff of nurse-technicians. Long gone are the days where wards and barns were left in the care of unskilled personnel. Today veterinary medicine, like human medicine, demands and provides care which requires special skills and training. The animal nurse-technicians, like their counterparts in human hospitals, are the support for the clinicians. They look after the patients, monitor the progress and administer treatments, helping to pave the way to recovery.
recalling intermittent events in a chain that started almost a half century ago at Penn's School of Veterinary Medicine is a sobering experience. Can one remember with some reliability what actually transpired, or do events take on a color of their own? So, add your own salt because I can't vouch for the accuracy of numbers of classmates and other quantitative elements and, living in Europe, I do not have easy access to such information.

The years 1936-1940 were not the most brilliant ones of the Veterinary School. The physical plant consisted principally of old brick buildings surrounding a patch of ground that probably harbored more parasitic eggs per square inch than any other turf in the world—the exercise area for dogs treated with an anthelmintic. Starting (if I recall correctly) with a class of 48 students we ended up with a graduating class of 29 which had to survive unbelievable examination questions requiring pure (and useless) rote memory (shades of "On Old Olympian Towering Tops", etc., for the cranial nerves). Joseph McFarland, our pathology professor (emeritus) who lectured also in the medical and dental students, and Roger Amadon (physiology) made up for many defects in the veterinary faculty.

We were graduated into an uncertain world with war on the horizon, so I decided that further study would not be amiss. My classmate Karl Persichetti and I opened an office for mixed practice and clinical laboratory examinations (human and veterinary) on Old York Road. The office was in a row of run-down and abandoned stores, around the corner from the most successful small animal practitioner in Pennsylvania, Alan Bachrach. He rightly did not fear our competition, and kindly helped us with difficult cases, as did Mort Gradess of Jenkintown. Our income barely covered our minimum expenses and there was plenty of time for study.

By June 1942 the war was well underway. I applied for an officer's commission and passed my physical examination for an epidemiological unit that was to be mounted at Johns Hopkins University and sent to the Pacific. For some still unexplained reason the army bureaucracy decided not to activate the unit and I was told to await further orders. I protested by letter to Eleanor Roosevelt that I was being unfairly dealt with, and that the country was not taking sufficient advantage of needed talent. I heard again from the army, acknowledging my letter to Mrs. Roosevelt, and stating that if I wanted to I could enlist as a private, but that I would have to await further orders if I wanted to serve as an officer in a veterinary, sanitary or other suitable unit. Persichetti and I sold our practice for less than a song (it wasn't worth more), and we awaited a call-up by the army. In the meantime I took a "temporary" job teaching at a veterinary school (Middlesex, later called Brandeis—closed in 1947), until December 1944.

Not having heard anything from the army by late 1944, and determined to go overseas, I joined the UNRRA team. My connections with Penn ended at that point for many years during which I satisfied a long-held desire to use my professional knowledge abroad to help less fortunate countries. I served for two years (1945-1947) as chief veterinary officer in Greece for UNRRA, followed by two years in Poland for the UN Food and Agriculture Organization helping to establish diagnostic and vaccine production laboratories, and to control major diseases many of which I knew only from textbooks (e.g., foot-and-mouth disease, swinepox, Newcastle disease, douring, glanders). Those were memorable years filled with human and professional interest.

In 1949 I was asked by the World Health Organization (WHO) to join their headquarters staff in Geneva, Switzerland, as their only "veterinary officer" which developed soon thereafter into a “veterinary public health" (VPH) unit. The term "veterinary public health" was new to the ears of health workers and required (along with "zoonoses") many years to put on the map.

WHO provided an unparalleled opportunity to put to work my 1942 MPH degree from Penn (MPH degree awards were eliminated at Penn the following year because of a war-depleted faculty.) Physicians and health workers could accept a veterinarian on the staff occupied with such diseases as rabies and brucellosis, but they were less prepared to acknowledge competency in epidemiology, statistics, food hygiene and public health administration dealing with both human and lower animal diseases. It took about ten years to consolidate veterinary activities in human health programs on something of a global scale by bringing together the potentials and resources of health, agricultural and veterinary ministries in various countries. Three of my closest collaborators in this effort were American veterinarians—the late Ernie Tierkel ('42), Jim Steele and Ben Blood whose names should ring bells in at least some ears (f. not, ask Mark Allam or Bob Marshak).

After a decade of such activities at WHO I decided it was time to refresh my professional base in laboratory research by spending a sabbatical year with Hilary Koprowski who had recently taken over as director of the Wistar Institute and was struggling to give it new vitality. His outstanding success in doing this was commemorated last year at the 25th anniversary of his directorship.

It was during those sabbaticals at Wistar ('65 and '70) that I resumed a close association with the Veterinary School and became professor of epidemiology and public health. In the '60s and '70s I enlisted for WHO the expertise of Dave Detwiler, Israel Live and Lawson Soulsby from the veterinary faculty as occasional consultants and research collaborators in cardiovascular disease, brucellosis, and ministries in various countries, an association that continued for over two decades. My lectures at the Veterinary School offered the opportunity to spread the gospel of VPH at Penn in a more systematic fashion. The interest and response of the students was gratifying, and some of them have already made their mark. Mark Allam and Bob Marshak were early supporters of this field of academic study and encouraged development of VPH at Penn. A significant and lasting proposition to the VPH discipline at Penn was given in the late '60s by Dan Cohen who worked on rabies for a year with me at Wistar and later joined the veterinary faculty. John S. Reif ably took over at Penn when Dan moved to Israel.

VPH work at Penn is now the responsibility of Lawrence T. Glickman, WHO's former scientific adviser to the director-general in 1962, and subsequently (1969) director of the Office of Science and Technology (later named Research Promotion and Development), in the director-general's office. Although my scientific horizon and responsibilities widened considerably in the mid-'60s, my first love of veterinary medicine was not neglected. VPH activities at WHO were placed in the very capable hands of Mohammed Abdusalam who led the unit for over fifteen years, followed by the present excellent incumbent Zdenek Matyas.

I retired in 1976 from WHO to devote more time to laboratory research and to take on the duties on a part-time basis of secretary general of the Pugwash Conferences on Science and World Affairs. I still serve periodically as scientific consultant for WHO. My research has continued in influenza at the veterinary school in Munich. I try to keep abreast of developments in rabies by continued periodic visits to Wistar, with accompanying stops at the now almost unrecognized Veterinary School with its splendid facilities for laboratory and clinical research on the Penn campus and at Bolton Center. Thus the links continue.

Editors note: We asked Dr. Kaplan if he would prepare this article citing some of his recollections about the Veterinary School and bring us up to date about his outstanding and interesting career since graduation.
FELINE SYMPOSIUM

The Sixth Annual Feline Fanatics Symposium was held on March 26, 1983, at the Veterinary Hospital of the University of Pennsylvania. Faculty members spoke on topics of interest to cat owners and breeders and answered many questions from the audience.

Dr. Linda Medawer discussed dermatologic problems, particularly MIYR (Malignant, dermatitis, in which the signs are itching, redness, loss of hair). The cases include parasites, food allergies, and other conditions. Noted cases include fleas (flea scabies) and Osteodotic mange (ear mites) are parasitic diseases. The cheyletiella mite produces a severe dandruff and is contagious to dogs as well as cats. It is treated with topical medication and controlled by thorough cleaning of the environment. Fleas are a constant problem and require treatment of the animal and the home. Be sure to keep an accurate record of any treatments and report all symptoms to the veterinarian. Fleas feed every two weeks and may be using to help "sterilize" the environment. Dermatophytosis ("ringworm") can be a problem in catteries. The signs are quite variable and may be asymptomatic carriers as well as cats with dermatitis, broken hair and hair loss. "Classic" rounded lesions are not always seen. Treatment requires a total body clip, weekly dips and systematic treatment. Food Allergy may occur and cause intense itching but gastro-intestinal signs are rare. Treatment consists of changing the diet.

Dr. Victoria Voith spoke on Behaviour of Cats. She discussed a survey in which a large number of cat owners believed their cats enjoyed being with people and sought attention. The cat was aware of the owner's moods and that they were aware of the cat's moods. All but one of the respondents considered their cat a family member. The most common complaint cat owners have is urinating or defecating outside the litter box. Intact male cats are most likely to spray and there is a 90% probability that this will stop if the cat is castrated. Punishment is not effective. The cat must be encouraged to use the litterbox and discouraged from using any other area. "Claw sharpening" may be controlled by providing an interesting scratching tree and consistently and immediately reprimanding the cat whenever it scratches on furniture. De-clawed cats do not appear to be harmed psychologically and continue to engage in the same behavior that they did prior to the removal of the claws. They scratch, catch objects, etc. After they have been de-clawed and do not appear to be distressed or frightened. Dr. Voith said that grass and plant eating appears to be normal in cats. They may be trained or conditioned if they are sprayed with water or are startled by a loud noise whenever they begin to eat a plant. However, many cats are clever enough to learn to eat plants or sharpen their paws only when the owner is not present. There has been little research in cat behavior and as scientists accumulate data, this should aid in solving behavior problems.

Dr. Gustavo D. Aguirre discussed Feline Pediatric Ophthalmology. He said that the incidence of inherited eye diseases in cats is very low as compared with dogs. A new form of retinal degeneration is being reported in the Abyssinian breed. It has not been described in this country but the disease has reached alarming proportions in Europe. A diagnosis can be made at approximately two years and most affected animals are blind by two or three years of age. It is important for Abyssinian owners to be aware of this recessively inherited disease because it is a severe and incurable condition. Early diagnosis is important as the treatment for this disease is different.

Dr. Lilian Maggio-Price spoke on Signs and Causes of Anemia in the Cat. She said that anemia is common in cats and most often not recognized until it is severe. It is essential to determine if the anemia is primary or secondary to another disease process. Infection with Helobastorectia (a parasite found in red blood cells), feline leukemia virus and exposure to oxidant drugs may be primary causes of anemia. Severely anemic cats often are lethargic with poor appetite and extreme tolerance. Occasionally, anemia in cats may appear as the result of chronic disease, trauma, or surgery. A complete evaluation of the patient, including a bone marrow examination, is often necessary to determine if the anemic process is reversible.

Dr. Mary C. Walter's topic was Feline Orthopedics. The medical specialty includes the diagnosis and treatment of diseases and injuries of the musculo-skeletal system. Treatment may be non-surgical (conservative) or surgical management. The goal is to return the cat to normal anatomical alignment and full function in as short a time as possible. Disease or injury affecting the different components of the musculo-skeletal system include tumors, fractures, and metabolic disease involving hyperparathyroidism. Arthritis involves the joints and there may be muscle contusions, joint fluid disease affecting the nerves and tendons in blood vessels. Dr. Walter gave rules for acute first aid, warning that any injured animal may bite or handle with caution, stay calm, capture and confine the animal, immobilize, stop major bleeding, cover wounds, do not give drugs or anything else by mouth and seek veterinary advice.

Continuing Education is important for owners and veterinarians. Programs are presented regularly by the School of Veterinary Medicine.

DOG SHOW JUDGES

There are just over 3,000 persons eligible to judge at championship shows held under American Kennel Club rules. There are additional judges with a provisional status. There is a total roll of over a thousand Specialty Shows (limited to one breed) held each year. Judges must meet a number of requirements before they are eligible to judge. Judges have a background which includes owning, breeding and exhibiting dogs. Judges at non-championship events (Match Shows), Club membership, nationality experience and a thorough understanding of the AKC rules. Judges who have been excluded based on their performance. The judges who have not been excluded based on their performance are eligible to judge.

A judging Application, which is lengthy and detailed, is submitted to the AKC. The names of applicants are published in their official publication (American Kennel Gazette). There is an interview and written examination and after about six months, the AKC's Board of Directors decides who will be approved. Usually a first-time applicant is approved for only one breed as a Provisional Judge. The new judge is observed in action by AKC representatives, particularly important is a field procedure. About 25 dogs an hour must be judged and keeping to the time schedule is important. After at least five assignments as a provisional judge, the A.K.C. will decide if the individual qualifies to be a regular judge. There is a Directory which lists all regular judges and the breeds for which they will be approved. To obtain additional breeds, another application is required and the evaluation process is repeated.

Assignments in a breed must be 30 days and two hundred miles apart so judges cannot officiate in the same area too frequently. Judges, dogs and handlers may gain experience at Match Shows where no championship points are awarded and entries may be made the day of the show. At these shows, the only requirement is that the judge be in good standing with the A.K.C. Most judges start their careers in the show ring at these Match Shows.
Finding out about Growth Hormone

A HORMONE WITH MANY COMPLEX AND INTERESTING ACTIONS.

Hormones direct, regulate, and coordinate the body systems. Since the mid 1960s they are studied intensively in small animal medicine. Researchers find that hormones have many more effects and roles than previously thought.

J. Eugen Eigenmann, D.V.M., Ph.D., assistant professor of medicine at the School of Veterinary Medicine is interested in growth hormone, a substance produced by the pituitary gland, a tiny body located at the base of the brain. “Growth hormone is unique among the hormones,” he explained. “Unlike other hormones which, for instance, stimulate steroid hormone production in a specific gland, the actions of growth hormone are not confined to one main single target. Further, growth hormone stimulates the production of other hormones, somatomedins or insulin-like growth factors which are produced in the liver and other tissues and which are held responsible for growth.” Growth hormone has two main activities. 1.) Anabolic ones causing biochemical reactions which build up body systems and increase energy resources. This appears to be mediated by the growth factors. 2.) Catabolic ones where complex substances are broken down into simpler ones, this appears to be a direct effect of the growth hormone.

Dr. Eigenmann’s research is concerned with these two activities of growth hormone and diseases which result when the hormone is secreted in improper quantities.

One of his studies, begun in 1979 while at the University of Utrecht, Holland, tested the hypothesis that diabetes mellitus, occurring frequently in elderly female dogs, is due to an overproduction of growth hormone triggered by elevated levels of progesterone. He also studied acromegaly, a condition occurring in elderly female dogs treated with progestagens or occurring spontaneously after heat. Affected animals show a sudden increase of soft tissue growth and a thickening of bone.

Diabetes mellitus in dogs is not rare. A recent study concluded that the prevalence ranges from 1/100 to 1/500 in dogs brought to veterinary hospitals. The risk is lowest in young dogs and is about equal for males and females in this group. In older animals however, females are at a greater risk.

“It has been found that diabetes occurred frequently in elderly female dogs during diestrus,” Dr. Eigenmann said. “It had also been found, in pharmacological studies conducted by pharmaceutical companies, that some dogs developed diabetes and acromegaly-like signs after having been given high doses of progestagens. Thus we thought that this type of diabetes and acromegaly might be caused by progesterone-evoked growth hormone elevation.”

Dr. Eigenmann used isolated canine growth hormone and developed an antibody against it for the radioimmunoassay which was needed to measure growth hormone levels in dogs. In the diabetic animals studied it was found that elderly female dogs with a mean age of 8.5 years did have elevated growth hormone levels during diestrus or after injections of medroxyprogesterone acetate (MPA), a progestagen. Diabetes occurred about four weeks after the onset of diestrus if the dog had cycled naturally. In animals which were given MPA injections, diabetes occurred also.

The dogs showed high circulating levels of growth hormone, glucose and insulin. “This is typical for growth hormone-induced diabetes,” he said. “We know that growth hormone is a diabetogenic agent. It causes insulin resistance mainly...”
in tissue thus insulin cannot act normally at these sites. The dog becomes hyperglycemic and in many cases the body responds by producing more insulin. This is reflected by increased insulin levels in the blood. The dog is diabetic because insulin target tissues. This condition is reversible provided no major damage has occurred to pancreatic cells producing insulin.

A number of dogs studied recovered spontaneously from diabetes when the progesterone levels dropped at the end of estrus or when the dogs were spayed. This was accompanied by a drop in the growth hormone level. Others recovered when the injections of MPA ceased. They too showed a decrease in the levels of progesterone and growth hormone. "Female dogs produce equal amounts of progesterone during estrus whether pregnant or not; also, reproductive cycles in dogs do not cease at the animal age. It could be possible that the lifelong exposure to these high progesterone levels in some animals eventually evokes growth hormone elevation. The mechanism by which this occurs is not known, however. Ovariohysterectomy was performed, the progesterone and growth hormone levels dropped to normal," Dr. Eigenmann explained that for elderly diabetic female dogs an ovariohysterectomy is indicated. He recommends treating most of these dogs with insulin in order to minimize damage to the pancreas. "In many cases, shortly after surgery, the animal returns to normal and the diabetes is gone." This type of diabetes is likely to be seen more frequently in Europe where female dogs are rarely spayed, instead they may be given biannual injections of MPA to prevent estrus. This may be continued throughout the dog's life unless it is bred.

Another condition associated with progesterone/progestagen-evoked growth hormone overproduction is acromegaly. In this condition the animal shows sudden increase in soft tissue growth, particularly in the head area, a distended abdomen and excessive skin folds. This is found in dogs treated with MPA to prevent estrus, where allowed to cycle normally. Acromegaly can be life threatening as the extra tissue in the throat interferes with normal breathing. Also in this disorder the level of growth hormone was found to be elevated. The animals recovered completely after an ovariohysterectomy and/or prostegasten withdrawal. The tissue shrank, the excessive skin folds disappeared and the swelling of the abdomen ceased. "Acromegaly in the dog caused by progesterone-evoked growth hormone overproduction may provide a model for the study of the regulation of growth factors," explained Dr. Eigenmann. "It is an exciting possibility."

Growth hormone-related diabetes also has been found in a cat. Dr. Eigenmann has a donated cat which has diabetes and elevated growth hormone levels. Tests showed that the animal has a pituitary tumor which causes an excessive production of growth hormone. "Growth hormone overproduction could be the cause of diabetes in a larger number of cats," he said. "Further study must be studied, though diabetes in cats is not as frequent as it is in the dog."

While the overproduction of growth hormone causes problems so does the underproduction of the substance in dogs. A form of dwarfism caused by low levels of growth hormone occurs. Dwarfism is a disease in which the genetically determined growth potential is not reached. In order to grow the body must produce growth...
Bruiser, a seven-year-old Doberman undergoes his eighth weekly treatment for lick granuloma by acupuncture.

WITH THE PRICK OF A NEEDLE

Photographs By Anthony B. Wood

he big red Doberman pinscher rested quietly on the table, stretched out relaxed and enjoying the attention of Susan Gallagher, a veterinary anesthesia technician at _VHUP_. The dog watched the people in the room and took no notice of the four needles in his legs. Two needles were visible on the front leg, one at the elbow and the other near the pastern. The other two needles were in the rear leg, one in the calf muscle and the other near the toes. Alan M. Klide, V.M.D., associate professor of anesthesia, checked the positions of the needles and then Miss Gallagher attached electrodes to them and turned on the current. As she carefully adjusted the strength of the alternating current, the muscles between needles on each leg began to twitch faintly.

"The current is low, just enough to stimulate the muscles and to cause the mild twitching," explained Dr. Klide. The dog didn't blink an eye and continued to relax. After twenty minutes of treatment the needles were removed and he jumped from the table to make the rounds to be petted.

This was his third acupuncture treatment. "He has a large lick granuloma on his hind leg and is developing another on the front leg," said Dr. Klide. "He has been under treatment for five years and nothing has worked. So we are trying acupuncture in the hope that it will help."

Dr. Klide is one of about 100 veterinarians in this country who practice acupuncture. He became interested in it as means of anesthesia but found that it was difficult to use for that purpose as animals will not remain still for very long. "It is a feasible technique for anesthesia for certain procedures," he said. "We recently did a Caesarian section on a dog, acupuncture worked fine, but the technique really is not feasible for a busy hospital. It takes longer and the acupuncture points have to be continually stimulated. If the practitioner has the time, it is suitable. We also operated on several sheep using acupuncture analgesia which was successful."

The Chinese believe that through acupuncture the basic dynamic energy in the body is manipulated by redirecting its flow and by restoring the balance of energy.

Research on acupuncture is being conducted here at Penn and at Purdue University. "When I became interested in acupuncture, I attended seminars for physicians; later there were seminars for veterinarians and I gathered as much material as I could find. Now there is a professional organization, the International Veterinary Acupuncture Society, a group which holds annual meetings and publishes research findings." Dr. Klide has written a textbook, _Veterinary Acupuncture_, co-authored by Shui H. Kung, Ph.D. and published by the University of Pennsylvania Press. It has gone into its second printing.

Acupuncture is an ancient art, practiced by the Chinese for more than 4,000 years. It has been known in the western world for several centuries but it has never been practiced widely. Interest in acupuncture suddenly increased after President Nixon's trip to China in the 1970s. Physicians traveled to China to observe the techniques and soon veterinarians became interested as acupuncture in China is widely used in veterinary medicine.
thought of as a treatment where needles are inserted at certain points of the body. "But that's not all, acupuncture treatment may be done by applying pressure to a point, by inserting needles and connecting them to electrical stimulators, by injection, by implantation of metals, by laser beams, by heat or cold," explained Dr. Klide. "It is acupuncture when one or more acupuncture points are stimulated by these means."

"We know it works, but we do not know why completely," Research has shown that acupuncture stimulation, even a single insertion of a needle, excites nerve cells and synapses in the spinal column that have an inhibitory effect on pain. By stimulating an acupuncture point the pain sensations are blocked out.

According to Dr. Klide, researchers have found that acupuncture causes cells in the brain and the spinal cord to produce certain morphine-like, painkilling substances. Research has also shown that acupuncture stimulation of specific points can increase the production of hormones. It has also been demonstrated that acupuncture can change the level of white blood cells in the body.

The mechanism of these phenomena is not exactly understood. "We need research and a group of veterinarians that treat a large number of diseases by acupuncture to document and report their findings," he said. "The Chinese in the past did not give statistics and it is not totally clear whether acupuncture alone works in certain cases or whether improvement is due to other factors."

Chinese medicine treats all ailments by acupuncture and the explanation of why acupuncture works has its roots in Chinese philosophy. It is believed that the body, its organs and their function interact and react to each other to maintain a balance, "yin yang," and that disease occurs when this balance is upset. The Chinese believe that through acupuncture the basic dynamic energy in the body is manipulated by redirecting its flow and by restoring the balance of energy. The elaborate Chinese acupuncture charts are based on this principle. Acupuncture points were determined by how the ancients believed the energy flowed and how the organs interacted. This may appear rather mystical, but research has found that the points designated by these charts do show different electric properties than other areas of the body. Most of the points are near major nerve trunks and manipulation can have an effect on different areas of the body. The charts exist not only for humans but also for animals, horses, cattle, chickens, pigs and other domestic animals, including the dog.

The traditional tools of the acupuncturist are fine needles, ranging in length from 1/4 to 8 inches. They are made of steel, silver, and gold, depending on their purposes. The needles are inserted and then either twisted or rotated slowly, or fast, depending on the effect desired; they may be moved in or out or left in place for a period of time. Some needles may be heated before insertion. Other needles are wide, these are used for bleeding, though that is not in the traditional sense of bloodletting, rather it means a quantity of blood is being let out at an acupuncture point. Other acupuncture tools are tiny gold beads which may be implanted under the skin, or small steel balls which are taped to an area to provide pressure.

The contemporary acupuncturist also utilizes electric current, laser beams, and ultrasound. Injections of water or air may also be utilized. "We have used acupuncture for about five years at New Bolton Center, mainly for horses but also for other animals," said Dr. Klide. "Most of the patients are those with chronic lameness and we have helped quite a few. They have returned to racing, jumping or dressage. In some cases the treatment had to be repeated after a few months, in other cases it was more than a year before the horse needed another treatment." Dr. Klide explained that acupuncture is often used at racetracks to provide relief to racehorses. "In Finland a horse treated by acupuncture may not be allowed to race for three days after treatment," he said.

Acupuncture is not usually used for the treatment of viral diseases or infections by veterinarians here. "It is used for chronic pain problems which have not responded to other treatments and which can not be resolved with either drugs or surgery," Dr. Klide explained.

He has an acupuncture clinic at New Bolton Center once a week and also a clinic at VHUP for small animals. "In addition to the dog with the lick granuloma I have treated a number of dogs with epilepsy." These are animals which have not responded to drug treatment. Dr. Klide inserted tiny gold beads beneath the skin at acupuncture points in the head. "This was done just recently and we don't know whether it works, though the owners have reported some improvement in some cases."

Dr. Klide hopes to see more dogs with chronic problems. He feels that treatment of a large number of animals is necessary to determine why and how acupuncture works. Currently the procedure is looked upon as experimental but Dr. Klide hopes that once scientific data are collected acupuncture will take its place alongside traditional veterinary treatment to become another weapon against pain.

An ancient Chinese art is being used as a therapeutic agent for animal disease.

The acupuncture clinics at New Bolton Center and at VHUP take cases by referral only. Appointments can be made by calling (215) 444-5800 for New Bolton Center, and (215) 898-5902 for VHUP.

P.S. Susan Gallagher reported that the Doberman pincher is improving and that, according to its owners, it had not touched the lick granuloma since acupuncture treatment began.
Bovine Surgery, an expanding field

The most common disorders seen are associated with one of the cow's four stomachs, the abomasum, which is the true stomach.

The most common disorders seen are associated with one of the cow's four stomachs, the abomasum, which is the true stomach. It can become displaced, usually within six to eight weeks after calving, and then must be surgically returned to its proper position.

"This problem wasn't diagnosed until 1959," said Dr. Donawick. "And the procedure to repair it was developed here by Dr. William Boucher during the sixties." According to Dr. Donawick this used to be a highly specialized surgery performed only at veterinary teaching hospitals. Today it is done at large animal clinics everywhere. Our graduates learned it here and have taken it into the field, to the farmers, eliminating the need to bring the animal here. We now have to look for more complex cases as those which formerly were considered difficult have become routine to those who graduated from here. We have taught them well." Dr. Donawick stated that it is hard for the School to stay ahead of the practitioners. "We develop a technique, then we go out and talk about it; we teach our students and in a short time it is incorporated into the repertoire of practitioners. We are then no longer..."
unique and must progress to find solutions to other more complex problems.

The case load at New Bolton Center consists of about 90 percent referral cases. "Many of these are very serious," explained Dr. Donawick. "They are often the cases the practitioner cannot handle at his clinic. Here we do have facilities for general anesthesia and intensive care. Practitioners rarely do surgery requiring general anesthesia. Most surgeries are done with local anesthesia." According to Dr. Donawick, general anesthesia for cattle was virtually unheard of ten to fifteen years ago. "Today, with the new drugs, it is no longer a problem."

The two surgeons explained that the cost of surgical treatment at New Bolton Center is not that expensive. "If it gets too costly, the dairy farmer cannot afford it," they said. "We have to keep the cost down and this puts the squeeze on us. We do not really recover all the expenses, such as the wear and tear on the equipment, but then this is a teaching hospital." The mission of teaching, service and research is very much on the minds of the two men as they continually work to find better ways to treat cattle surgically and make this treatment affordable for the farmer. The advances made in bovine surgery during recent years show that this quest for solutions is not an impossible one and that it is an undertaking of economic importance to the cattle industry.

Dr. Tulleners came to New Bolton Center as a resident. He graduated from the University of California at Davis and worked as an intern at the University of Saskatchewan, Canada. He is now assistant professor of surgery and lives with his wife and child near New Bolton Center.

Cattle can have orthopedic problems. "They can dislocate their hips," said Dr. Tulleners. "This is a serious problem because they cannot get up." He has repaired a number of such hips with Dr. David Nunamaker, professor of orthopedic surgery at New Bolton Center. "The ligament and joint capsule which hold the ball and socket joint together are torn," he explained. "We remove the damaged tissue, clean out the joint and replace the femoral head into the socket. Eventually the body forms fibrous tissue which stabilizes the joint." Dr. Tulleners continued by saying that footing for these patients is critical. "We place them in a stall bedded with sand so they have excellent traction. Cows make good orthopedic patients, they are very careful and deliberate, they rarely do anything hastily." He is also studying stifle repairs, another common orthopedic prob-
Four Pennsylvania Alumni were honored by their peers as recipients of the 1983 Veterinary Medical Alumni Society Award of Merit presented by outgoing Society President, Nancy D. Brown, V'73, during the Annual Meeting at New Bolton Center on Saturday, May 21.

The honored individuals were Pierre A. Chaloux, V'53, of Holland, MI, M. Josephine Deubler, V'38, of Philadelphia, PA, Louis Leibovitz, V'50, of Ithaca, NY, and John T. McGrath, V'43, of Philadelphia, PA.

Pierre Chaloux, V'53 was recognized for his outstanding service in the United States Department of Agriculture Animal and Plant Health Inspection Service, where he served as Deputy Administrator since 1977 and as Assistant Deputy Administrator from 1974 to 1977. Dr. Chaloux's career has included such assignments as Representative for European-African Emergency Programs in Rome, Staff Veterinarian for Import-Export Animals and Products, and Staff Veterinarian for the Tuberculosis Eradication Center in Washington, D.C.

M. Josephine Deubler, V'38 has been on the faculty of the School of Veterinary Medicine since she became its first woman graduate. During her entire career she has been a leading figure in alumni affairs, serving the Veterinary Medical Alumni Society for many years as secretary and historian. Known by dog fanciers both nationally and internationally for her work in support of purebred dogs, she is a key representative of the School and veterinary profession in this field. She continues her active role as Show Chairman of the Bucks County Kennel Club, the Montgomery County Kennel Club and the American Fox Terrier Club.

John T. McGrath, V'43 is a major figure in the areas of veterinary pathology, neuropathology and clinical neurology. He is best known for his pioneering work in cataloging and making clinicopathological correlations of spontaneous lesions of the nervous system in animals. These activities led to the publication of his book, *Neurological Examination of the Dog*, which was published in 1956. The publication of this volume and Dr. McGrath's other activities provided the scientific basis for veterinary clinical neurology and were important stimuli to the movement toward clinical specialization in veterinary medicine.

As a member of the University of Pennsylvania faculty since 1947, Dr. McGrath has trained many veterinarians who have become major figures in academic and industrial veterinary pathology. Known as a friend of the students and graduates of the School, the Alumni Society Award saluted his contributions to veterinary medicine and his accomplishments as a friend and devoted teacher.

Louis Leibovitz, V'50, is associate professor of avian and aquatic medicine at Cornell University and director of Cornell's Laboratory for Marine and Animal Health at the Marine Biological Laboratory, Wood's Hole, Mass. Dr. Leibovitz was saluted for his contributions to new veterinary medicine knowledge achieved as a researcher and teacher of diseases of domestic and wild aquatic animals. In addition to his work at Cornell, Dr. Leibovitz served as director of Poultry Diagnostic Laboratories, Delaware Valley College, Doylestown, PA, from 1953-1963, and as Principal Investigator of a Sea Grant from 1973-79. His pioneering work in the identification and characterization of new diseases of poultry, pigeons, ducks, wildfowl, finfish, and shellfish was noted in the award presentation.

The appointments of a new director of Annual Giving and Alumni Affairs and of a coordinator of Continuing Education were announced by Dean Robert R. Marshak in May.

Assuming the position of director of Annual Giving and Alumni Affairs at the Veterinary School is Shira Barkos. Ms. Barkos comes to the School from the Philadelphia Zoo where she served as director of Corporate and Foundation Relations and assistant director of Development. Her new responsibilities at the School will include Alumni Annual Giving, Friends of the Small Animal Hospital and Friends of New Bolton Center.

Ashra Markowitz has been appointed as coordinator of the Veterinary School's Continuing Education. Ms. Markowitz has been with the School for twelve years as an administrative assistant in the Section of Small Animal Surgery, and more recently in the Office of Annual Giving and Alumni Relations. She will work closely with members of the School's Program Committee, Drs. Tom Divers, William Moyer and Charles Newton in organizing the lectures, seminars and laboratories in specialized subjects for practicing veterinarians, symposia for the owners and breeders of large and small animals, and the Penn Annual Conference.

* * *

Alumni returning to New Bolton Center for Alumni Day on May 21, 1983 enjoyed visiting the Fairman Rogers collection of rare equine books. The books, numbering over 1200, were collected by Fairman Rogers, an alumnus of the University of Pennsylvania and long-time professor of civil engineering at the University. His collection was donated to the School of Veterinary Medicine by his wife. It has been maintained at the New Bolton Center library since 1974. The collection has grown through the donations of 400 other books in the intervening years.

On special display during Alumni Day were *The Anatomy of a Horse* by Andrew Snape, the first great equine work to be published in English (1683). The author, farrier to Charles II, included many interesting illustrations. This book was recently on loan to the Springfield, Massachusetts Museum of Art.

The oldest book in the collection is a German text by Fugger published in 1583. The beautiful prints illustrating this book drew much alumni interest.

Librarian, Alice Holton, welcomes visitors to view the collection at any time. Researchers from the historic New England village, Sturbridge, Massachusetts used illustrations from the collection to verify the riding dress styles and side saddle restorations for the village.
GROWTH HORMONE

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hormone, growth factors and thyroid hormone. All three are necessary. If one is absent or deficient, normal growth will not take place.

In man hypothyroidism (low levels of thyroid hormone) is the second most frequent endocrine disorder of childhood. In the dog this juvenile hypothyroidism appears to be rare. Instead it was found that dwarfism in the dog is of pituitary origin. It is postulated that these dogs may have a cyst of the pituitary and that this interferes with growth hormone production. Another possibility is that the pituitary cells are not properly developed. At this time it is not known why growth hormone production is lessened in the affected dogs. Pedigree analysis of affected German shepherds points to the condition being transmitted by an autosomal recessive inheritance.

The animals are small, they only grow for a few weeks after birth. Their skin is fragile and they do not develop an adult hardcoat. Eventually the puppy coat starts to fall out and the dog becomes bald. Tests show that the animals are deficient in growth hormone and insulin-like growth factors. They can be treated with injections of growth hormone. "Treatment is quite expensive," said Dr. Eigenmann. "The growth hormone injections will cause the hardcoat to grow, also the skin will lose its fragility. Treatment will have to be repeated when the hair falls out again." The injections of growth hormone do not cause the animals to grow as most are presented to Dr. Eigenmann when the growth plates have closed or are about the close.

Underproduction of growth hormone can also occur in older dogs. "This happens in some smaller breeds," Dr. Eigenmann explained. "These dogs develop normally and then at about the age one or two years, begin to show signs similar to those of the dwarfs. The hair falls out and no new coat growth take place." These dogs can be treated by injections of growth hormone. It is not known why the production of growth hormone ceases. "The condition is not yet studied, though it is possibly genetic in origin," Dr. Eigenmann said.

His current work involves the study of dwarfs and the older dogs which underproduce growth hormone. He is also studying several breeds to evaluate growth hormone secretion potential and the levels of growth factors. Growth factors have only recently been identified and Dr. Eigenmann's project is designed to gather further knowledge about the importance of these factors. The dwarf dogs, the adult dogs with insufficient growth hormone levels, and dogs of different body size may provide some important answers. He is collaborating with Dr. D. F. Patterson from the Section of Medical Genetics, and Dr. E. R. Froesch, Metabolic Unit, University Hospital, Zurich, Switzerland.

Dr. Eigenmann came to the University of Pennsylvania in December 1980. He arrived here from the University of Utrecht where he received his Ph.D. in 1981. Prior to his work in Holland Dr. Eigenmann had been a visiting research fellow at the "Laboratoire Hormones," Department of Biochemistry and "Institut National de la Santé et de la Recherche Médicale," University of Paris.

Dr. Eigenmann came to the University of Pennsylvania in December 1980. He arrived here from the University of Utrecht where he received his Ph.D. in 1981. Prior to his work in Holland Dr. Eigenmann had been a visiting research fellow at the "Laboratoire Hormones," Department of Biochemistry and "Institut National de la Santé et de la Recherche Médicale," University of Paris. He received his veterinary degree from the University of Zurich in 1972 and the advanced Dr. med. vet. degree from the same institution in 1975.

ANIMAL CRACKERS

"NEW" DOG BREEDS

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The American Kennel Club recognizes 125 breeds of dogs, which may compete in championship shows. Beginning January 1, 1984, three breeds will be added to the show classification. These are the Pharaoh Hound in the Hound Group, Portuguese Water Dog in the Working Group and the Tibetan Spaniel in the Non-Sporting Group. There is a Miscellaneous Class at A.K.C. shows. These dogs are not admitted to registration in the Stud Book and are not eligible for championship points. They may compete in obedience trials and earn obedience titles. In addition to the three breeds named above, the following may compete in Miscellaneous at this time: Australian Kelpies, Border Collies, Cavalier King Charles Spaniels and Spinoni Italiani.

The Federation Cynologique Internationale which governs dog shows in 50 nations, mostly in Europe (not Great Britain), accepts 325 breeds. The latest breeds they have recognized are a long-haired Weimaraner developed in Czechoslovakia and a South Russian Sheepdog.

ANIMAL PROFILE

THE SHORT LIFE OF JUSTIN

A baby gorilla dies.

Justin, the Philadelphia Zoo's youngest gorilla, died May 20, 1983. Since April 27, the four-month-old had been ill with shigellosis, a condition that resembles dysentery in human beings. According to Dr. Keith Hinshaw, Zoo veterinarian, the shigellosis caused a severe inflammation of the bowels. From this, the infant developed the blood poisoning (septicemia) which led to his death.

The gorilla had been removed from mother Snickers on April 27 when he was first taken ill. After intensive care by the Zoo staff and after showing signs of improvement, it was decided to place him back with Snickers on May 3 in order to allow him to nurse. He had not been feeding well for the Zoo staff. On May 18, the staff noticed that the infant had become depressed and was not nursing. The next day Justin was again taken from his mother to be given treatment, including intravenous fluids and antibiotics. Following treatment he had appeared to be improving, however, he began to lapse in and out of consciousness until he died at 6:15 am.

The Spring issue of Bellwether carried a story announcing the birth of the baby gorilla.
Dr. Colin Harvey, professor of surgery, received the Simon Award of the British Small Animal Veterinary Association for his outstanding contributions in the field of veterinary surgery. The award was presented to Dr. Harvey at the Annual Congress on April 9, 1983.

The Simon Award has an interesting history. Simon was a Golden Retriever, the property of a blind telephone operator. Simon lost his sight which allowed him to resume his duties as a guide dog. His appreciative owner made the award possible.

Dr. Wilfred T. Weber, former acting chairman of the Department of Pathobiology, was named chairman effective January 1, 1983.

Dr. Ralph L. Brinster and Dr. Benjamin G. Brackett have been asked to serve on the organizing committee for a workshop on In Vitro Fertilization and Embryo Transfer in Animals to be held in 1983. The workshop is sponsored by the Reproductive Sciences Branch of the National Institute of Child Health and Human Development of N.I.H.

Dr. Benjamin G. Brackett, professor of animal reproduction, visited the Department of Obstetrics and Gynecology, Queen Victoria Medical Center, Melbourne, Australia during the period March 14 to April 16, 1983. A primary purpose of the trip was to attempt to fertilize sheep ovum in vitro, in cooperation with Dr. Alan Trounson.

Dr. David Kitchevsky, Wistar professor of biochemistry, delivered the 1983 William F. Geddes Memorial Lecture before the American Association of Cereal Chemists at Minneapolis, Minnesota on March 7, 1983.

Dr. Alan Klode, associate professor of anesthesiology, spoke before the Chester County Equine Council on April 11, 1983 on the subject of acupuncture in horses.

Dean Robert R. Marshak was recently elected to membership in the Philadelphia Society for Promoting Agriculture. The Society, founded in 1783, will celebrate its Bicentennial one year after the Veterinary School celebrates its Centennial. The Society had an interesting role in the early history of animal disease in this country. Many of its original members were physicians who wrote some of the first reports on Texas Fever and rabies. One of its members was Dr. Benjamin Rush, a signer of the Declaration of Independence, who advocated the development of veterinary medical education.

New Bolton Center hosted the joint meeting of the Helminthological Society of Washington and the New Jersey Society for Parasitology on May 14, 1983. Dr. Gerhard Schad, professor of parasitology, introduced the program which included the following presentations: Oxyurhinum, Dr. E. W. Cupp, Department of Eumology, Cornell University; Schisococcius, Dr. Donald B. Hofmann, St. Josephs Hospital, Lancaster, Pennsylvania; and Malaria, Dr. Franklin A. Neva, Laboratory of Parasitic Diseases, N.I.H., Bethesda, Maryland. The scientific meeting was followed by a reception at Allam House sponsored by Dr. Vassilios Theodorides, SmithKline Beckman Corporation, and the Laboratory of Parasitology, Veterinary School.

The annual Phi Zeta Veterinary Student Paper Competition was held on March 22, 1983. Six papers, reflecting student research efforts, were presented. Papers were judged on two categories: 1. Students in the Regular V.M.D. Program. First prize in this category went to Randall A. Frey (V84) for his presentation titled "Lactate Aciduria in Irish Setters." Second prize was awarded to Paul Calle (V83) for his work on "Effect of Hunters' Switch from Lead to Steel Shot on Potential for Oral Lead Poisoning in Ducks." 2. Students in the V.M.D.-Ph.D. Program. First prize was awarded to Leslie MacGregor (V85) for her research on "Enzymatic Determination of Tissue Myosin Isoconcentrations in the Spontaneously Diabetic Chinese Hamster." Kim Tiplitz-Blackwell (V87) received the second prize for a paper titled "Baroreceptor Activity Related to Cell Properties." Congratulations to the prize winners and all who participated!

The Mrs. Cheever Porter Foundation granted $20,000 to Dr. Donald F. Patterson's Medical Genetics Laboratory.

Dr. David Kitchevsky, the Wistar professor of biochemistry in the Veterinary School, has just been elected president of the Society for Experimental Biology and Medicine. He has also been appointed to the Honorable John Block, U.S. Secretary of Agriculture, to the USDA Dietary Guideline Advisory Committee.

At the invitation of the Heart Institute of Japan, Dr. Donald F. Patterson, Charlotte Newton Sheppard Professor of Medicine and chief, Section of Medical Genetics, participated in the Second International Symposium on the Etiology and Pathogenesis of Congenital Heart Disease, held in Tokyo, Japan, May 5-8, 1983. While in Japan Dr. Patterson also gave lectures to the Japanese Society of Animal Electrocardiography and the Japanese Animal Hospital Association.

Dr. David Kronfeld, Elizabeth and Whitney Clark Professor of Nutrition, participated as speaker at the Postgraduate Foundation of the University of Sydney, Australia, in their course on nutrition. The course attracted 167 veterinarians from all over Australia and the proceedings will be published. Dr. Kronfeld was also recently the recipient of the New York Farmers Association Award for 1983, in recognition of his work in nutrition for farm animals. The New York Farmers Association was formed in 1882 and for over a century has made some outstanding contributions to agriculture. Mr. Oakleigh I. Thorne, a member of the Veterinary School's Board of Overseers is active in the Association.

Dr. Lawrence T. Glucksmann received aRalston Purina Small Animal Research Award for his work in epidemiology in June, 1983. Evaluation and final decisions for the award are made by the American Veterinary Medical Association Council on Research.
Resources

NEW BOLTON CENTER

GENERAL SERVICES
The area code for New Bolton Center is 215. Arrangements for hospitalization or emergency services can be made by calling 444-5800. Inpatient and outpatient referrals should be directed to specific sections. For Bovine Surgery, call 444-5800. For Equine Surgery, call 444-3595.

Equine Outpatient Clinic
Open Monday through Friday, 9 a.m. to 5 p.m., and accepts patients without prior referral. Call Dr. William Moyer, 444-5800, ext. 405 or 406.

Field Service
Provides routine health care and emergency service for farm animals and horses in the surrounding community. Call 444-0900.

SPECIALTY SERVICES

Cardiology
Clinic day: Tuesday and Wednesday, 9 a.m. to 5 p.m. Services include cardiac consultation, electrocardiograms, phonocardiograms, echocardiograms, and cardiac catheterization. Complete work-ups for poor racing performance can also be executed, including respiratory evaluation, submaximal exercise testing, endocrine evaluations, endoscopy, cardiology, and lameness evaluations. Work-ups can be scheduled for other days. Call (215) 444-5800, ext. 359.

Nutrition
Nutritional services, for the livestock industry, are offered in cooperation with referring practitioners or the New Bolton Center Field Service. Call (215) 444-5800, ext. 316.

Radiology
Radiology, Monday through Friday, 9 a.m. to 5 p.m. Only referral cases accepted. Call 444-5800, ext. 198.

Reproduction
Fertility Clinic: The Georgia and Philip Hofmann Research Center for Animal Reproduction provides fertility examinations for stallions, mares and other large animals. Call 444-5570.

DIAGNOSTIC SERVICES

Clinical Microbiology Laboratory
This laboratory is located in the Myrin building, Room 103, and provides a number of diagnostic services for the practitioner: isolation and identification of aerobes, fungi, salmonella, CEM (not for export purposes), environmental, surgical, and postmortem specimens; mastitis specimens; antimicrobial susceptibility testing; direct gram stains, acid-fast and KOH (fungal) stains; preparation of bacterins, and certified EIA (Coggins) testing. Specimens should be sent directly to Microbiology, New Bolton Center. For general information and specimen and special handling procedures, call 444-5800, ext. 156, 157, or 159.

Clinical Laboratory Medicine
This laboratory provides routine hematologic, urinary and fecal analysis. Profile studies (12 separate assays) are available at reduced charges. A limited number of tests are available during evening and weekend hours. For a detailed listing of tests, fee schedule, and preferred collection system, call (215) 444-5800, ext. 250.

Large Animal Pathology Laboratory
This laboratory offers necropsy and biopsy services. Biopsies should be mailed to the laboratory. Animals for necropsy must be accepted by the duty pathologist. Call 444-5800, ext. 211.

Cooperative Poultry Diagnostic Laboratory
Friday 8:30 a.m. to 5:00 p.m. This is a University-state cooperative laboratory providing diagnostic and consultation services for poultry, game birds and pet birds in the following areas: serology, bacteriology, virology, and pathology. Farm visits may be arranged. Call 444-0900.

JULY

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<td>NBC Practitioners Advisory Board Meeting</td>
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<td>AVMA National Meeting, New York City Alumni Reception</td>
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SEPTEMBER

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<td>NBC Practitioners Advisory Board, Picnic, NBC</td>
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<td>Kennett Square Business and Professional Women's Association, Dinner and Program, NBC</td>
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<td>SCVMA Picnic, NBC</td>
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OCTOBER

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<td>Fall Faculty Meeting, Philadelphia</td>
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Steve Peoples and Jim Reed, President and Vice-president of the Class of 1984 receive the Sports Day plaque from Josh Jacobson of Adelphia Graphic Systems. The plaque, donated by the company, may be seen in the lobby of B-101 at VHUP. The Class of 1984 has won the Veterinary Alumni Society event for two years.
Resources

Diagnostic Assistance For Herd Problems
Clinicians are available to assist and/or consult with veterinarians in the evaluation of difficult or unusual problems. For information call Dr. Robert Whitlock, 444-5800, ext. 321.

Endocrine Laboratory
Assays and consultation on reproductive, thyroid, and adrenal hormones. Call Dr. Marolo Garcia, 444-5800, ext. 202.

Cytogenetics Laboratory
Chromosome analysis. Call Ms. Lynne Kressly, 444-5800, ext. 204 or 110.

AUXILIARY SERVICES
The Large Animal Hospital has, on call, certain specialty services at the Philadelphia campus, such as dermatology, neurology, and ophthalmology. Investigators in research units at New Bolton Center, such as the Comparative Leukemia Studies Unit, also are available for consultation. For information call 444-5800.

VHUP Referral

HOT LINE

The last segment of the new VHUP Referral system goes into place with the appointment of Susan Berthold as referral coordinator and manager of the Referral HOT LINE. Susan, formerly coordinator of the Emergency Service at VHUP, will assure that follow-up reports made to referring practitioners are processed and forwarded quickly. While facilitating the flow of paperwork between VHUP and practitioners is her main responsibility, she will also man the new Referral HOT LINE, 898-IVET (898-1838).

According to Barry Stupine, VHUP Director, the new HOT LINE has been installed to better serve the referring practitioners. By dialing 898-IVET (898-1838), medical information concerning a specific patient may be obtained by the referring veterinarian. Also the HOT LINE may be used to report a problem if written information has not been received in a reasonable period of time.

The HOT LINE, which is located in the Medical Records Department, will operate twenty-four hours a day. After business hours and when Susan is away from her desk, an answering machine will record the message and she will call with answers as soon as possible. The HOT LINE is not intended to replace calls between clinicians and practitioners or the formal reports to practitioners, but can be of use whenever practitioners feel the information can be obtained in this manner. As always, practitioners are encouraged to call VHUP clinicians to discuss specific cases.

The new Referral System was designed by a committee of practitioners, VHUP clinicians and administrators in September of 1982. A Referral Information booklet was mailed to referring practitioners in late November. This booklet lists the services available at VHUP, the clinicians and their telephone numbers. As stated in the booklet, a blue referral form or referral letter should accompany each patient when it is brought to VHUP. This form provides the hospital with pertinent medical background about the animal.

Referral Postcards are now being mailed from VHUP to the referring practitioner within twenty-four hours after the animal is seen. This card informs the practitioner about the tentative diagnosis and treatment plan. A final written report from VHUP to the practitioner should follow the completion of tests, diagnosis, and treatment and Ms. Berthold will monitor this system. We encourage all practitioners to use the HOT LINE (898-IVET) for help.

Please note: The private number for veterinarians who wish to reach our appointment section is still 898-4218.

Bellwether

University of Pennsylvania
School of Veterinary Medicine
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