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As the School of Veterinary Medicine enters its Centennial year it looks back with a deep sense of pride on its achievements in education, research, and service. These accomplishments have brought the School to a position as one of the great veterinary institutions of the world. 1984 not only marks the end of a first century but also the beginning of an even brighter and more productive future for the School.

In celebration of its legacy, and in recognition of its promise, the School will sponsor a yearlong series of events. Some are planned as educational ventures for veterinarians and animal owners, others are a means to recognize individuals who have contributed greatly to the School's success, and some are strictly for pleasure.

We hope you will join us in celebration of our birthday.

Centennial Year Program

January

26-27 Pennsylvania Annual Conference for Veterinarians
The 84th Annual Conference will be held at the Franklin Plaza Hotel, Philadelphia. This is the oldest such meeting in the United States.

February

11-17 Annual Meeting of The American College of Veterinary Surgeons
The Veterinary School will host a reception on Wednesday evening, February 15 at the University Museum.

13-14 Westminster Dog Show
The School will sponsor an exhibit and will host a reception for friends of the School from the dog fancy.
Dean Robert R. Marshak announced that the Small Animal Hospital has received a contribution of $5,000 from the Devon (PA) Dog Show Association. The gift, said Mrs. John A. Lafon, Jr., President of Devon, is one "... which we are pleased to contribute to the fine work of the Small Animal Hospital of the University of Pennsylvania School of Veterinary Medicine."

Dean Marshak noted that this gift from Devon is the largest gift the Veterinary School has ever received from a show-giving club. "It will do a great deal to help meet our need for unrestricted operating funds for the Small Animal Hospital this year. We are immensely grateful to Mrs. Lafore and her associates at Devon."

**April**

14 New Bolton Center Open House
This annual affair affords an opportunity for the public to become acquainted with the unique facilities and the educational, research and service activities of the rural campus.

**May**

19 Alumni Day
The Centennial Alumni Day will feature historical exhibits, presentation of special awards, and reunion dinners.

21 Commencement
Ceremonies for the School's Centennial Class will include the Dean's Reception for students, families and friends.

**June**

11-15 C. L. Davis Symposium on Pathology
The Veterinary School will host this prestigious international meeting of pathologists.

**October**

2 Founders Day Dinner
This date marks the founding of the School in 1884. The dinner, held in the University Museum, will provide those in attendance with a preview showing of the exhibit, Man and Animals—Living, Working and Changing Together. Other areas of the Museum will be open. Special awards will be presented.

**November**

6-9 Sixth International Conference of the Cardiovascular Dynamics Society
The Veterinary School will host this outstanding meeting of scientists working in the field of cardiovascular dynamics.

16-19 American Kennel Club 100th Anniversary Meeting Dog and Show
The Veterinary School will join the AKC in celebrating joint anniversaries. The School will sponsor a reception and will provide a Hospitality Suite at the AKC Show.

**ANIMAL PROFILE**

**TWIN "TEST TUBE" CALVES**

In 1981 we reported on the birth of Virgil, the world's first "test tube" calf at New Bolton Center. Happy tidings are again in order. On Labor Day, (no pun intended), 1983, the world's first twin calves born from in vitro fertilization were delivered at the Pennstar Embryo Transfer Clinic, Lancaster County, Pennsylvania. The calves, known as Penn's Pride and Quintus, were conceived in the laboratory of Dr. Benjamin G. Brackett at New Bolton Center. Dr. Brackett is professor of animal reproduction and is an international authority on in vitro fertilization. The births resulted from a collaborative effort between Dr. Brackett, the Atlantic Breeder's Cooperative, and Dr. Carl Troop who was attending veterinarian.
like many of those who enrolled in the Veterinary Department in the early 1900s, Evan L. Stubbs had a farm background. Born January 3, 1890, on a dairy farm near Oxford, Pennsylvania, he learned to milk cows long before he reached school age. As a youngster, before starting for school each morning, it was his task to deliver the milk to a receiving station. Dr. Stubbs graduated from high school as valedictorian and then spent a year working on the farm.

He entered the Veterinary Department in 1908 with the aid of a scholarship which he obtained through the help of Dean Leonard Pearson. At that time tuition was $100 per year, and the program lasted three years. Classes were held from 8 a.m. to 6 p.m. with one-half hour for lunch. The School was located in the present quadrangle building, the first portion of which had been completed in 1907.

After graduation, Dr. Stubbs spent two and one-half years in a country practice operated from his father's farm. He called on his patients at area farms in a horse-drawn buggy. In 1913 he accepted a position to be a veterinarian on the State Farm operated by the Pennsylvania Bureau of Animal Industry, located outside Philadelphia in Marple Township. The position was offered to him by Dr. Clarence J. Marshall. State Veterinarian and professor of veterinary medicine in the Veterinary Department. The primary work at the State Farm (also called the Experimental Farm) was the production of anti-hog cholera serum which was supplied free to veterinarians. Dr. Stubbs was also on-call to visit sites of hog cholera outbreaks and was available for other diagnostic assistance. Anthrax serum was also produced here, and, in addition, a herd of cattle, all reactors to the tuberculin test, was maintained in order to study bovine tuberculosis and to standardize the intradermal tuberculin test.

In 1919 the State Farm was disbanded and Dr. Stubbs was transferred to the State laboratory which was located in the Veterinary School. Here, he was responsible for running a variety of diagnostic tests. Brucellosis was prevalent and blood testing was started to diagnose this important disease in cattle. While working in the laboratory, Dr. Stubbs became interested in poultry diseases, which, at that time, were neglected by the veterinary profession. By 1927, Dr. Stubbs was director of the laboratory and had published fifteen papers on poultry diseases. He also initiated a special course on poultry diseases which was presented to veterinary students. He continued to teach this course until 1960.

In December 1927, Dr. Stubbs resigned his post in the laboratory, which, at this time, was moved from the Veterinary School to Harrisburg, Pennsylvania. Upon his resignation he was appointed full-time professor of pathology in the Veterinary School.

Soon after joining the faculty, Dr. Stubbs became associated with Dr. Jacob Furth of the Phipps Institute. Dr. Furth was interested in leukemia and had a grant to study this disease. Together Drs. Stubbs and Furth isolated strain 13 leukemia virus from chickens, and the study of this virus was to become a major project for many years. Strain 13 virus produced both leukemia and sarcoma in chickens and Dr. Stubbs and his associates attempted to separate a specific leukemia virus from the sarcoma virus, an attempt which never succeeded.

Throughout his career in the Veterinary School Dr. Stubbs continued research on poultry diseases and on various aspects of pathology. He published 161 scientific articles. It was significant that early in his career Dr. Stubbs was conducting original research when very little of such work was being done by other members of the faculty.

Dr. Stubbs had a great personal impact on many areas in the evolution of the Veterinary School. He was the first faculty member to be appointed to the Graduate School of Arts and Sciences. As a result of his appointment, he was instrumental in Dr. Israel L.ive's being the first veterinarian to be admitted to graduate school and the first to obtain a Ph.D. degree in 1940.

Dr. Stubbs was involved in the creation of the School of Animal Pathology at Bolton Farm in the late 1930s. Bolton Farm was located in Bucks County. The formation of the School of Animal Pathology was a collaborative effort between the Veterinary School and the Medical School. This was the first organized attempt to bring the two schools together in a research atmosphere. Unfortunately, this auspicious beginning did not bear fruit. Dr. Alfred Stengel, Dean of the Medical School, and a staunch supporter of the plan, died, and sources of funding dried up. Some research was done at Bolton Farm on such diseases as brucellosis, periodic ophthalmitis in horses, foot-and-mouth disease and mastitis.

Dr. Stubbs played the leading role in the establishment of a clinical pathology laboratory in the Veterinary School in 1928. This laboratory provided diagnostic service for the hospital and served as a teaching mechanism. From 1948 until 1959, Dr. Stubbs was Extension Veterinarian and as such, he was responsible for the publication of the Veterinary Extension Series. This was an excellent publication in which the faculty published many of their papers during the period 1921-1959. The journal was used to publish the proceedings of the Penn Veterinary School's annual conference and contained many excellent review papers. Dr. Stubbs also organized the sheep blood unit which was in operation from 1940 until 1962. This unit, set up in 1940, was established to supply sheep blood on a regular basis to veterinary laboratories within a 300-mile radius of Philadelphia.

Aside from these and other contributions to research and teaching, Dr. Stubbs, who became internationally known early in his career, carried the message about the Veterinary School to many parts of the world. He attended four World Veterinary Congresses (London 1913, New York 1924, Tokyo 1926, and Baltimore 1927), and eight World Poultry Congresses. At a number of these meetings, he presented papers. In 1962 he made a trip around the world with his wife and daughter.

Many graduates of the Veterinary School will remember Dr. Stubbs as an effective teacher whose lectures were detailed and whose examinations were demanding. His faculty colleagues remember him as a quiet voice of conservatism. His most significant contributions were made to such important committees in the School and in the University.

Dr. Stubbs retired in 1960 and since then, has been emeritus professor of pathology. He lives with his wife and child in Chester County, Pennsylvania, in the vicinity of New Bolton Center. He still maintains an active interest in the School and has made a major contribution to the accumulation of historical material for the Centennial year. Dr. Stubbs still drives to Philadelphia to visit the school, which he is now unable to do (unknown to his colleagues) he parked his car several blocks away and walked. After much arm-twisting he was convinced to use one of the lots adjacent to the School! Dr. Stubbs is one of the oldest living alumni.

We honor Dr. Evan L. Stubbs for his many years of contributions to his alma mater and wish him Godspeed.

Dr. John Martin.
NEW CANCER TREATMENTS FOR CATS

Photographs by Mr. Wood

When cancer in cats is discussed, feline leukemia is frequently the topic. It is the most common cancer in cats, affecting 280 in 100,000. This is a higher risk than reported for other domestic animals and man. But cats, like other species, also suffer from other cancers. The second most common cancer in cats is squamous cell tumor, affecting the head and neck region; the third most frequent cancer is mammary tumors.

It is this last category which is being studied by Dr. Ann Jeglum, assistant professor of medical oncology at the School of Veterinary Medicine, University of Pennsylvania. Dr. Jeglum feels that cancers occurring in the general population of cats and dogs can provide valuable models for the study of the disease in humans as these animals do not live in laboratory setting but share the environment with people. “They are subject to the same stresses and pollutants as their masters,” she said. “They suffer from the same cancers as humans, and when treating them, we can study and evaluate treatment methods and perhaps find new avenues.”

Mammary cancer in the cat is a disease of the older population, similar to the occurrence in humans. Cats, unlike dogs which frequently have benign tumors of the breast, have malignant tumors in 86 percent of the cases. In felines there appears to be no difference in tumor incidence between spayed or whole animals. In the dog the incidence of breast cancer is markedly reduced if the bitch is spayed at a young age. Bitches ovariectomy prior to the first heat cycle do not show any evidence of the disease.

Feline mammary tumors (feline mammary adenocarcinoma) metastasize and invade other body systems. Dr. Jeglum explained that owners and veterinarians often do not check the mammary glands of older cats. “When you have an older cat, the breast should be examined at regular intervals,” she said. Consequently the animals presented to practitioners or VHUP usually are in the more advanced stages of the disease. Traditionally mammary cancer in the cat is treated with surgery, either all mammary tissue is removed or the affected glands are taken out. This may not prevent recurrence of additional tumors nor does it stop the spread of metastatic disease.

In a study, conducted recently at VHUP, researchers treated fourteen cats with advanced metastatic disease with chemotherapy drugs. Of this group, ten had undergone previous surgery to remove affected mammary glands, two cats had had a radical mastectomy followed by immunotherapy, and two cats had inoperable primary tumors. Ten of these cats had been ovariohysterectomized at various ages.

A regimen of two drugs used in chemotherapy treatment of human breast cancer was instituted for the cats at regular intervals. Of the fourteen cats, eleven were evaluated and examined after the end of treatment. The other three cats could not be examined, one had died and two were not returned to the hospital. Three of the eleven cats showed a regression of all clinical disease and tumor development for at least four weeks; the median survival rate of these animals was 283 days. Four cats showed a reduction in measurable disease, their median survival rate was 130 days. The remaining four cats showed no response to the treatment and their median survival rate was 57 days. The animals studied had a median duration of the disease prior to chemotherapy of 270 days. It was found that cats which had a history of more than nine months of the disease had a median survival rate of 47 days, whereas cats with a history of less than nine months of clinical signs had a median survival rate of 111 days. These results emphasize the importance of early diagnosis and swift treatment of mammary cancers.

The regimen studied at VHUP had some side effects such as anorexia, mild gastric upset, and hair loss. All were transient. According to Dr. Jeglum, there have been no studies in cats to determine the optimal approach to treating breast cancer. “The usual avenue is surgery,” she said. Feline breast cancer has a high local and regional recurrence rate. Researchers found evidence of microscopic disease along the entire chain of mammary glands as well as in near-by lymph nodes. This is very similar to findings in humans where adjuvant chemotherapy is employed after surgery to prevent spread and recurrence of the disease.

Dr. Jeglum feels that the prognosis for cats could be improved if the disease were diagnosed early and then treated through a dual approach of surgery and chemotherapy. The researchers found that chemotherapy, rather than hormone therapy, is indicated in cat mammary tumors. “The tumors are progesterone receptive,” Dr. Jeglum said. “Also, there have been reports of mammary tumors in cats treated with a hormone preparation containing progesterone.”
She views the treatment of mammary cancers in felines as an important model for the study and treatment of the disease with implications not only for cats but also for humans. "This would be an excellent model for the study of drug screening or new treatment regimens as the disease occurs naturally in a varied population. Also, the shorter life span of cats makes it possible to evaluate treatments over the entire life of an animal."

She recommends that owners of older cats routinely examine the mammary glands of their older cats and promptly contact the veterinarian if changes are noted so that early treatment can be instituted. "The chemotherapy protocol can be worked out with the veterinarian," she said. "He or she can handle it, and we provide the back-up." Early detection, just as in human breast cancer, may save the animal's life and enable it to provide many more years of companionship.

The outlook for cats with feline leukemia is also improved. This disease, caused by a virus, affects about 30 percent of the cat population. According to Dr. Jeglum, quite a few cats are able to combat the virus and develop an immunity to it. "It is most dangerous for the younger cats," she explained. Feline leukemia virus (FeLV) is a retrovirus which is transmitted horizontally, from cat to cat through the saliva. Retroviruses are capable of producing a DNA copy of the retroviral material which then is incorporated into the cell. Here it is replicated each time the cell divides. Once a cell is infected, it and its subsequent divisions contain the retroviral material.

FeLV causes tumors in various parts of the body, or a suppression of the immune system. Cats with the virus often have no symptoms of cancer but succumb to a number of infectious diseases. "Some people have linked FeLV with AIDS," said Dr. Jeglum. "There is no evidence for such association. The virus is species specific. It will only infect cats, not humans, dogs or other species."

Animals which carry the virus can be identified with the help of two tests. One is an immunofluorescent test (IFA) which detects the antigens to the disease. This test identifies the shedders of the virus, animals which are infectious to others. The other test is an ELISA test which does not identify shedders but can identify transiently infected cats. These are animals which have been exposed to the disease and whose systems are able to develop an immunity. The ELISA test can be performed by the practitioner, the IFA test requires a special laboratory.

According to Dr. Jeglum, the diseases associated with FeLV are fatal in a large number of cats. "They may never develop tumors," she said, "but a large proportion of cats die from the complications caused by the suppressed immune system. When FeLV is suspected it must first be ascertained whether the animal has tumors or whether it is immunosuppressed. Then a course of treatment can be decided upon." Cats with immune problems can be treated with injections of BCG, a non-specific bacterial agent which stimulates the immune system and helps the animal ward off various infectious diseases. BCG treatment is not effective in cats which have developed tumors. These cats have to be treated with chemotherapy. "Either treatment is not that expensive and we have had good success rates," said Dr. Jeglum. "Chemotherapy works well for lymphoma. If the animal has leukemia, the prognosis is not that good. as the animal becomes leukemic."

The protocol for treatment is established at VHUP and then is turned over to the practitioners who handle the cases from there on.

Dr. Jeglum stated that the cats with the highest risk of contracting FeLV are those which are allowed to roam freely. "We don't know the extent of the virus in the general cat population," she said. "There are so many cats out there, roaming, that it is impossible to check the incidence, let alone control the disease."

The next highest risk group are cats which are indoor/outdoor cats. She advises that another high-risk group of cats are kittens adopted from shelters.

Currently there is no effective vaccine against FeLV. Owners of cats can, to some extent, prevent the disease by keeping their cats indoors or by minimizing exposure to stray cats. If an infected cat is discovered, it should be isolated. Often this simple measure prevents the spread of the disease. In many cases the cats are able to fight off the disease. They remain healthy and can be returned to their companions.

The oncology clinic at VHUP sees new patients on Mondays. Appointments can be made by calling 898-4680. Helma Weeks.
AVIAN INFLUENZA

Drafter struck poultry farms in Lancaster County in the middle of October. Suddenly farmers were losing up to 70 percent of their flocks, and egg production dropped to zero. All summer long Lancaster County poultry farmers had coped with outbreaks of avian influenza, but their birds had lived and continued to produce eggs, though at a reduced rate.

In April we identified an avian influenza virus, H5N2, from chickens on poultry farms in a 25-square-mile area of Lancaster County," said Dr. Robert J. Eckroade, head of the Cooperative Poultry Diagnostic Laboratory at New Bolton Center. "The disease was mild, though its economic impact was great on the farmers, as profit margins in the poultry industry are small and even just a little drop in productivity is significant."

Dr. Eckroade and Silverman and the staff at the laboratory have monitored avian influenza since they first identified the virus. In mid-October the disease suddenly changed. It became deadly. "The mortality rate jumped to 70 percent and egg production declined to zero," Dr. Eckroade explained. "We were and are still dealing with the H5N2 virus, though a more pathogenic form." He stated that flu viruses often become more virulent as they cycle through a population of birds. This is nothing unusual.

By the middle of November the laboratory had examined serum samples from close to 500 farms and had identified the disease in 79 cases, twenty-one of these were of the more dangerous strain. This does not constitute the total number of cases as much testing is now done by federal officials. The USDA has declared the outbreak of avian influenza an "extraordinary disease problem," and has launched a program to try to eradicate the disease. Federal and state officials have placed the affected area under quarantine and poultry, poultry products and equipment can only be moved by permit. A program of depopulating affected flocks has begun and farmers will be reimbursed for the destroyed chickens only. These are the animals with the virulent strain of avian influenza, they will be killed and disposed of by burial. Dr. Eckroade estimates that three million chickens will be killed between now and January 1984.

When avian influenza first appeared in April, Dr. Eckroade and his colleagues, in cooperation with the Lancaster County Poultry Association, developed a protocol to prevent the spread of the disease. They recommended that chicken houses be declared off limits to everyone but the personnel working there. They asked that personnel wear protective clothing when entering the houses and that this clothing be changed prior to entering another chicken house. Despite these and many other precautions the disease continued to spread at a rate of about five farms per month until mid-October.

It appears now, according to Dr. Eckroade, that avian influenza may have been spread not by people but by flies. Flies collected in infected chicken houses were found to have flu virus. "These flies can travel between 0.8 and 1.8 miles without any difficulty," he said. "That's the distance between many of these farms. Also, earlier Larvadex, a larvicide which is added to chicken feed to control flies, was removed from the market and the fly population increased dramatically." Many farmers reported that avian influenza usually started in the middle of the chicken house, and spread from there, suggesting that the virus was not "walked" into the chicken house. Today chickens are housed in large buildings which are ventilated and which provide a controlled environment for up to 50,000 birds living there. The air is moved with huge fans which bring in fresh air. It is very possible that the flies are sucked in and then dropped through this air shaft. Anyone traveling between farms knows how many flies can be in the vehicle when one leaves. So it may well be that the suspected movement of the virus by people was really due to transport of flies from farm to farm in some cases.

Federal investigators have begun to monitor the migrating water fowl passing through southeastern Pennsylvania on their way south. "The milder form of avian influenza probably arrived here with these birds," said Dr. Eckroade. "They carry the virus but are not affected by it." "Now the worry is that the more virulent strain may be carried by migrating birds to other areas of the country. It is extremely important that dead birds with the disease are disposed of in a such a manner that other animals are not exposed to the virus. Currently dead birds are moved in closed trucks and are promptly buried.

Avian influenza last appeared in Pennsylvania in 1924-25 when Dr. Evan L. Stubbs (1911) identified a lethal strain which killed domestic flocks. Since that time there have only been a few outbreaks in other states.

The Cooperative Poultry Diagnostic Laboratory at New Bolton Center is partially funded through an annual grant from the Pennsylvania Department of Agriculture's Bureau of Animal Industry. Competitive grants from the U.S. Department of Agriculture and the Pennsylvania Department of Agriculture help to fund poultry research. It is one of four such laboratories in the state.

In the middle of November personnel at the laboratory were working at a fever pitch, analyzing about 1,000 serum samples weekly in an effort to monitor the outbreaks of the two forms of avian influenza. It can only be hoped that the measures instituted by the state and federal governments will halt the spread of the disease to other parts of the state and the country. These measures and the disease have a severe impact on the poultry industry. "Poultry farming in Pennsylvania is a family business," said Dr. Eckroade. "There will be many farmers who will be out of business because the reimbursement will not begin before all the expenses. In addition, no funds are available to cover the losses incurred before the federal program was started." Dr. Eckroade also pointed out that there is an additional impact because consumers are afraid to eat chickens or eggs. "I'm afraid that the virus may be one of these that we can never eliminate," he said. "That's nonsense," he said. "People are not infected by this flu virus. Poultry farms infected with the highly pathogenic form of the virus are quarantined and no eggs or birds leave the farm except to be buried." Helene Weeks

Note: As of Dec. 8, 1983, the number of chickens destroyed reached 5.9 million. The ban on the use of Larvadex was lifted for Pennsylvania.
COLD WEATHER ADVICE

Dogs kept in apartments, especially overheated apartments, should wear a sweater when they are taken out in windy, cold weather. This also is advisable for any short-haired dog, especially small breeds. Large long-haired dogs usually are outside much of the time and may not need this protection.

If the dog is kept outside, it needs a dry bed where there is protection from wind. Different breeds have different requirements: so there can be no general rule about how much heat and protection is necessary. However, young puppies must be kept warm.

Dry dogs often walk on sidewalks which have been salted. It is well to wash their feet when they come inside. Use warm water and dry with a towel. Check between the pads.

Don't neglect regular grooming. This is better than having which should be done only when necessary.

Keep all dogs away from antifreeze. It's poisonous! Dogs seem to like it and it can kill.

VETERINARIAN'S OATH

Being admitted to the profession of veterinary medicine, I solemnly swear to use my scientific knowledge and skills for the benefit of society through the protection of animal health, the relief of animal suffering, the conservation of livestock resources, the promotion of public health and the advancement of medical knowledge.

I will practice my profession conscievously, with dignity and in keeping with the principles of veterinary medical ethics.

I accept as a lifelong obligation the continued improvement of my professional knowledge and competence.

EYELID ABNORMALITIES

Puppies are born with their eyes closed. They open at about ten days to two weeks. If opening is delayed, a bacterial infection may develop and the unopened eye may appear enlarged. Veterinarian's attention is indicated.

Eyes should be checked regularly for discharges, redness or any sign of irritation. The eyelids protect the eye. Prompt treatment and correction of defects are essential to keep the eye healthy.

Entropion is incomplete closure of the eyelids and is most common in breeds which have prominent bulging eyes (Pugs, Pekingese, etc.). The eyelids don't close completely when the dog blinks and the dog may sleep with its lids partially opened. This may lead to drying and ulceration of the cornea. Artificial tears will help prevent irritation but surgery may be indicated to correct the condition.

Phimosis may cause irritation and may be hereditary. Trichiasis is the condition where normally placed eyelashes irritate the cornea. This refers to abnormal eyelashes. Surgery may be necessary to prevent loss of vision due to excessive irritation.

Exophthalmos is the inward rolling of the margin of the lid. It may be corrected surgically.

Ectropion is dropping or outward rolling of the lid. It is a breed characteristic in Bloodhounds and St. Bernards. It can become a problem if debris accumulates.

Breeders should keep in mind that these conditions may be inherited. While the defects may be breed characteristics, exaggeration should be avoided. Surgical correction may result in a "normal" eye but should this dog be used for breeding?

RULES ABOUT A.K.C. REGISTRATION

It is necessary to register the entire litter before an individual dog can be registered with the American Kennel Club. The sire and dam must be registered with A.K.C. and the litter must be born in the U.S.A. If the litter application is accepted, the A.K.C. will send the owner one application for the individual registration of each dog in the litter. "Papers" may or may not include this application form.

The breeder is the owner of the dam at the time of mating. If the dam was under eight months old at time of mating, the A.K.C. requires satisfactory proof. The same applies to a sire under seven months old or over twelve years of age. There are additional rules if artificial insemination or frozen semen is used.

As a general rule, a pure-bred dog cannot be registered because required signatures cannot be obtained. However, conditional agreements may be recognized if they are in writing. This may be done if a puppy from a registered litter has a serious fault and is not considered suitable for showing or breeding. The buyer must agree in writing that the dog will not be registered. The seller then will retain the application form.

There are regulations which require record-keeping. Identification of registered animals by tattooing is recommended but this is not required by A.K.C.

If you purchase a puppy and the seller does not have an application for registration, obtain a signed statement giving the following information:

- Breed, sex and color of the dog
- Date of birth of the dog
- Registered names of the dog's sire and dam
- Name of the breeder

If this information is not available, it would be better not to buy the dog, particularly if he is planned to show or breed it.

Copies of Registration Rules and application forms are available from the American Kennel Club, 51 Madison Ave., New York, N.Y. 10010

Winter 1983
Looking Back
A PROUD PAST
AN EXCITING FUTURE

SCIENCE FOR THE FUTURE
ANIMAL REPRODUCTION

C centennial Celebration! 1884 1984
Looking Forward

Winter 1983
IN 1942 when Dr. David K. Detweiler began his studies on cardiovascular disease in animals this was almost a virgin field, except for work that had been done in Europe. There was little of significance in the English literature and the prevailing opinion amongst clinicians was that heart disease in animals was uncommon and of little importance. Dr. Detweiler recalls that as a student he was taught that digitalis was ineffective in animals. His subsequent work showed that the reason for this opinion was that a proper oral dose-regimen had not been established for the various species.

Initially, Dr. Detweiler's work revolved around the use of the electrocardiogram, and physical examination, primarily of dogs and horses in the clinics of the Large and Small Animal Hospital. During these early years Dr. Detweiler began to establish relationships with physicians who specialized in cardiology. Dr. Martin H. Wendkos was especially helpful; he invited Dr. Detweiler to attend his evening cardiology clinic at Philadelphia General Hospital. It was there that Dr. Detweiler received training in the then current methods of clinical cardiology.

By 1952 Dr. Detweiler had accumulated enough information to publish, in the Veterinary Extension Quarterly, a review of seven years' experience with cardiovascular disease in the Small Animal Hospital of the Veterinary School. This time it was apparent that heart disease was not uncommon in dogs and that it offered a fertile area of investigation and in 1954 a Heart Station was created. This led to an immediate increase in the number of animals examined for heart disease since there was now a central location to which patients could be referred.

In 1955-56 Dr. Detweiler was granted a Guggenheim Fellowship to study at the Veterinary Physiological Institute at the University of Zurich, Switzerland. While there, he conceived the idea of undertaking a large-scale epidemiological study of cardiovascular disease in dogs. It was this study which would lead to the development of the CCSU (Comparative Cardiovascular Studies Unit).

Upon returning to the United States Dr. Detweiler prepared a grant request for an epidemiological study of 5,000 dogs. This was funded by the National Institutes of Health (N.I.H.). Among those involved in this initial study were Dr. Donald F. Patterson, who did clinical work, Dr. Klaus Hübchen, in pathology, and Mr. William Schnarr, who provided invaluable technical assistance. Another important addition to the group was Dr. Robert P. Beals, an epidemiologist, who was assigned temporarily to the project by the United States Public Health Service. The epidemiological study contributed the first definitive data on heart disease in dogs in this country. This information provided two historic breakthroughs: it formed the basis of establishing a new specialty in veterinary medicine, cardiology, and it supplied the impetus for conducting detailed comparative work. In the epidemiological study a total of 4,851 dogs were examined, and the prevalence of heart disease was found to be about 10/1,000 cases. Not to be overlooked in its importance was the fact that through this study Dr. Detweiler and his colleagues applied the first systematic approach for diagnosing cardiac disease in dogs using a combination of diagnostic methods—electrocardiography, auscultation, fluoroscopy, and radiography.

Primarily as a result of the epidemiological study and the fact that Dr. Detweiler had now established an international reputation in veterinary cardiology, a major grant was obtained in 1960. A one million dollar grant from N.I.H. to extend over a ten-year period, was obtained and CCSU was established.

Under the terms of this grant the administration and the work done in the CCSU would be under the direct supervision of Dr. Detweiler. The three general areas of activity of the CCSU were designated to be: research, especially in the comparative aspects of heart disease; training; and a center for collecting and disseminating information. The CCSU was designated as an international training center by the World Health Organization.

One of the very important findings of the epidemiological study was that the forms of congenital heart disease detected in dogs were anatomically and clinically similar to those known to exist in man, and had a prevalence rate of about 5.6/1,000 dogs in the clinical population.

One of the first research efforts of the CCSU was a study on the inheritance of heart disease in dogs. This work has been carried out by Dr. Patterson and was initiated when analysis of the records of the epidemiological study indicated that the five most common cardiac anomalies in dogs were not randomly distributed amongst pure breeds. For example, the incidence of patent ductus arteriosus was found to be highest in poodles, and the following conditions were most prevalent in the species indicated: pulmonary stenosis (beagles), subaortic stenosis (Newfoundland), persistent right aortic arch (German shepherds), and Tetralogy of Fallot (keeshond). It was apparent that congenital cardiac defects in dogs deserved intensive study and there was a need for an individual expertly trained in genetics. From 1964 to 1966, Dr. Patterson studied genetics at Johns Hopkins University, and while there continued to conduct studies on dog families in a number of breeds that have an unusually high frequency of a particular defect. Subsequent studies by Dr. Patterson involving experimental matings of dogs donated to the project have substantiated the validity of the earlier observations in the epidemiological study; the offspring of matings between dogs with congenital cardiac defects were affected with the same type of defect in a high frequency. Continued work by Dr. Patterson and his colleagues showed for the first time, in any species, genetic determinants. This finding led to a series of grants to further delineate the mode of inheritance and an investigation of the affects of genetic defects on the embryologic development of the heart. This work was done in collaboration with Drs. James W. Buchanan, Dr. David H. Knight, and Dr. Robert L. Pyle as well as collaborators from other institutions in the United States and foreign countries. Dr. Patterson is now recognized as a pioneer and an international leader in the study of cardiac malformations in dogs and has broadened his work to include studies of other genetically related diseases. He is chief of the section on Medical Genetics, the only such unit in any...
The epidemiological study contributed the first definitive data on heart disease in dogs.

The training program of the CCSU has paid huge dividends. Not only has it provided other institutions and agencies with a body of veterinary cardiologists, but several individuals who either trained in the program, or became associated with it at its outset, have remained at the Veterinary School where they have assumed important roles in the research, teaching and clinical service programs. Noteworthy are Drs. James W. Buchanan, David H. Knight, Julius Melbin, E. Nel Moore, and Fred Fregin. Mr. William Schnarr who was with the unit at its inception has obtained a master's degree in pathology and is presently working on a Ph.D. degree.

Drs. E. Nel Moore and Joseph F. Spear have done some brilliant work in the field of electrophysiology, and in particular have studied and defined the sites in the heart which contribute to arrhythmias and conduction disturbances. Physicians from HUP, trained under Drs. Moore and Spear, have now perfected techniques for surgical excision of these sites, thus correcting serious arrhythmias in man. Dr. Moore, in association with Dr. John P. Boneau formerly of Duke University Medical School, and now director of cardiology, Medical College of Georgia, conducted research which led to a better understanding and a method of surgical correction of the arrhythmia seen in the Wolf-Parkinson-White (WPW) syndrome in man.

Dr. Julius Melbin works in the field of hemodynamics, in which he is attempting to solve problems associated with the mathematical expression of blood flow that have been controversial for the past 150 years. Before coming to the veterinary school and receiving his V.M.D. degree and then an M.Sc. degree in cardiology and a Ph.D. degree in biomedical engineering, Dr. Melbin had trained as an engineer. The scope of Dr. Melbin's work deals in a general way with blood flow and the coupling of the heart with the vascular system and how these two are interrelated. Some of the complex equations developed by him were beyond anyone's knowledge when he began his work. One particular area of investigation by Dr. Melbin involves the study of how blood vessel design affects hemodynamic control without any energetic needs at all.

Dr. Detweiler along with Dr. Buchanan and Dr. Knight has been primarily interested in acquired cardiovascular disease. In recent years Dr. Detweiler has concentrated especially on electrocardiography in the dog and cardiovascular toxicology. Today, Drs. Buchanan and Knight are responsible for the clinical program in cardiology in the Veterinary Hospital of the University of Pennsylvania (VHUP) and operate the Heart Station. Dr. Knight is chief of the section of cardiology and Dr. Buchanan functions as the cardiac surgeon. Dr. Buchanan was the first to develop the field of cardiac surgery in veterinary medicine. Dr. Knight made pioneering studies on the hemodynamic and anatomical effects of heart worm infection on the heart and pulmonary circulation in the dog.

Other work that originated in the CCSU involved a study of the pathological characteristics of vascular disease in dogs and swine and investigations on the effects of exercise on the cardiovascular system of the horse.

Dr. Fregin, who worked at New Bolton Center, conducted research on the cardiovascular response to exercise in the horse and found that some unique adjustments occur in this animal. Dr. Fregin, who also operated the Heart Station at the rural campus, left the faculty in 1981.

The overall program of research and clinical work on dogs conducted by various individuals of the CCSU staff has resulted in a comprehensive understanding of heart disease in this animal. It is now known that a triad of pathological lesions are responsible: valvular fibrosis, intramural coronary arterial sclerosis, and lesions of diffusely distributed necrosis. The pathogenesis of heart disease in the dog usually involves valvular lesions starting early in life, leading to mitral insufficiency in the middle years and finally congestive heart failure in the aged dog.

Funding for the CCSU lasted for about seventeen years. Since the end of the umbrella-type funding by NIH, each investigator has developed his/her individual grant proposals; there has been no central funding nor use of common facilities. Actually today the term CCSU is used primarily in a historical sense but it still functions as a source of information.

The impact of this pioneering work and the development of the CCSU on veterinary and comparative cardiology is so great that it is difficult to measure. There is no doubt that the Unit became the world leader in comparative cardiology and that the work of the past forty years led to the development of an entirely new specialty in veterinary medicine. In 1942 there were no veterinarians who were board certified in cardiology, today there are over thirty who have this specialty certification in the American College of Veterinary Internal Medicine (sub-specialty, cardiology). Research reports from individuals in the CCSU are published in the most prestigious journals on an international basis. The contributions of the CCSU in the area of congenital heart disease are unique in the annals of cardiology; it is safe to say that no other institution in the world could make an equal contribution.

Beyond its impact on veterinary and comparative cardiology the CCSU has played a very important role in the renaissance of the Veterinary School in the past two decades. Through the development of this Unit, worldwide attention was focused on the Veterinary School as an institution dedicated to forging an outstanding research program. It is reasonable to say that the CCSU attracted not only individuals to cardiology but that it was also responsible for attracting good people to other programs. Internally, it is also acceptable to speculate that the CCSU, through its success, stimulated faculty members to intensify their research efforts.

Dr. Detweiler recruited an exceptional group of individuals to staff the CCSU and many have contributed to its success. Through his great personal efforts Dr. Detweiler has truly earned the accolade, "Father of Veterinary Cardiology." Dr. John Martin Gregory Tibodeau, a junior student, contributed to this story.

Photographs by Mr. Wood
THE SECOND CENTURY FUND

SECOND CENTURY FUND CAMPAIGN BEGINS

The Second Century Fund Campaign, a five-year campaign to raise $41.5 million for the School of Veterinary Medicine, University of Pennsylvania, was officially inaugurated October 13, 1984.

"The hundredth birthday of the School is almost on hand," said Dean Robert R. Marshak. "And as we enter our second century of service in 1984, we must provide a more secure financial base. This is even more true of the School if it is to hold its own within reasonable bounds while sustaining its distinction as a great center for teaching, patient care and biomedical research.

The campaign, under the leadership of Vincent R. Murphy, Jr., President of Merrill Lynch Capital Resources, Inc. and of the United States Aquatic Team and general chairman of the campaign, and Dr. Mark Allam, former dean of the School, and chairman of the campaign, has already raised a nucleus fund of $9 million. Included in this amount is the endowment of the Marion Dilley and David George Jones Professorship, and a gift of $1.456 million for an intensive care unit at New Bolton Center.

Of the $41.5 million the School hopes to raise, over $28 million will be used to endow scholarships, professorships, the deanship, clinical services, and research. More than $13 million will fund capital projects, which include the improvement of laboratories, the construction of units for intensive care and contagious disease isolation at New Bolton Center, and an expanded library at the Philadelphia campus.

"While scholarship funds provide direct financial aid to students, endowment for professorships and operations, by relieving the School's overall fiscal problem, will also have a favorable effect on student tuition," said Dr. Marshak.

In addition to the quality of its training programs for students, the reputation of a veterinary school, according to the dean, is largely dependent on the caliber and scope of its research. "In the field of genetics, for instance, there is great potential for applying basic knowledge about the arrangement, structure and function of genes in animals to the control and prevention of genetic disease and the improvement of livestock production," he said.

One goal of the campaign is to endow both a professorship in Veterinary Medical Genetics and a Laboratory of Veterinary Medical Genetics. "The forefathers of veterinary medicine are virtually without limit," said Dr. Marshak. "Our faculty have the ability to make extraordinary contributions in the area of food supply, disease prevention, both animal and human, detection of environmental toxins, and the care of agricultural, companion, laboratory, exotic, sporting, and zoo animals."

To help the School attain the goals established by the Second Century Fund Campaign, a number of volunteer committees have been put in place to represent the different constituencies of the School of Veterinary Medicine.

The honorary chairman of the alumni committee is Dr. Mark Allam, and the co-chairmen are Lay C. Ackerman, V.M.D. and Clifford F. Wright, V.M.D. The agriculture committee is co-chaired by Richard W. Newphet, administrative secretary of the Pennsylvania Farmers Association, and Mrs. David Weckel, an overseer from New York, N.Y. Mrs. Christine Couley, the manager of Bright View Farm, Columbia, N.J., co-chairs the equine committee with Max C. Hempy, a well-known Pennsylvania breeder of Standardbreds.

The parents committee is chaired by Dr. Taylor Marshall, chairman of the Fegley Water Corporation, Oakmont, Pa. The VHUP committee is co-chaired by The Hon. John A. Lafore, Jr., former United States Congressman from Montgomery County, Pa., and former president of the American Kennel Club, and by Mrs. Gaynor G. McKevitt, an overseer from Newtown Square, Pa.

There are a number of other committees addressing themselves to the University administration and development. The entire campaign is overseen by Dr. Robert R. Marshak, dean of the School, and Charles S. Wolf, chairman of the Board of Overseers of the School of Veterinary Medicine.

THE MARION DILLEY AND DAVID GEORGE JONES PROFESSORSHIP

D

david George Jones of Moorestown, N.J., a 1924 graduate of the Wharton School, endowed a chair in animal reproduction at the University of Pennsylvania's School of Veterinary Medicine.

The Marion Dilley and David George Jones Professorship is endowed with a $13 million charitable trust and is named in honor of Mr. Jones and his late wife, Marion Dilley Jones. The generous gift enables the School to continue to enhance teaching and research activities in large animal reproduction at New Bolton Center.

The professorship is in the Department of Clinical Studies at New Bolton Center. "The chair will be held by a senior staff member," said Dean Robert R. Marshak. "It will be in the Section of Reproduction and will be affiliated with the Georgia and Philip Holtzman Research Center for Animal Reproduction."

Mr. Jones has long been interested in the health maintenance of food producing animals. He feels that more research is needed to maintain optimum health and reproductive capabilities of food producing animals and that such work may help to reduce the food shortages, particularly those endured by Third World countries.

Mr. Jones, a former advertising executive and district manager for McGraw-Hill maintained dairy cattle on his two farms in Marlton, New Jersey. Through this interest he became a member of the Quaker City Farmers and the Philadelphia Society for Promoting Agriculture. It was at meetings of these two agriculture societies that he met Dr. Mark Allam, then dean of the Veterinary School. A close friendship developed and Mr. Jones took a keen interest in the growth of New Bolton Center. In 1975 he established the David G. Jones-Marion Dilley Jones Fund for the maintenance of Allam House, the historic farmhouse at New Bolton Center which now functions as a conference center.

The Marion Dilley and David George Jones Professorship for animal reproduction is the tenth endowed chair at the Veterinary School. "The Veterinary School has the greatest number of endowed chairs in the University in proportion to standing faculty," said Sheldon Hackney, president of the University of Pennsylvania. "An endowed chair makes it possible to achieve and maintain the highest quality of research and teaching. It permits us to attract the very best teachers and scholars to our faculty."

The School of Veterinary Medicine, in 1888, became the first veterinary school in the nation to have an endowed chair. It was the Lawrence Baker Sheppard Professorship in Surgery, currently held by Charles Bunker, V.M.D. at New Bolton Center.

Mr. Jones has always had a keen interest in University affairs. "The University of Pennsylvania has had profound influence in my life and I have long planned to show my appreciation for this contribution in some meaningful way," he said.

"He has concerned himself with the historical status of Penn's veterinary school, said Dr. Hackney, "and this endowed chair will be a fitting reminder of his long-standing interest and support."
FINDING OUT ABOUT STRANGLES

Spring to horse breeders means foals, breeding, and—strangles. This infectious disease can sweep through a farm, affecting newborn foals, weanlings, yearlings, and older horses. While rarely fatal, it leaves a trail of ugly scars and sick animals. Strangles is often seen on large breeding farms where a great number of mares and foals are kept or are passing through for breeding.

Until recently very little epidemiologic information on strangles was available. This has changed. A research team from the School of Veterinary Medicine, University of Pennsylvania, began a study of strangles in March 1983. The project was funded by a grant from the Standardbred Owners and Breeders Association and a grant from an anonymous horse breeder in New Jersey.

"Strangles is a highly infectious disease of the upper respiratory tract of horses," explained Dr. Corinne R. Sweeney, one of the investigators from the department of clinical studies at New Bolton Center. "The sick animal has a runny nose with a thick mucous nasal discharge. Often it has a fever and refuses to eat. The lymph glands in the throat and jaw area swell which can interfere with breathing and swallowing, hence the name "strangles." The disease is caused by Strep. equi, an organism normally not found in healthy horses. As strangles runs its course the lymph glands develop abscesses which eventually break open and drain externally. Although in most horses the clinical signs of the illness last three to four weeks, durations of as few as five days and as long as ten weeks were also observed during the course of the study.

The usual treatment for strangles is to rest the horse and keep it quiet without stress. Strangles can be treated with antibiotics; penicillin is very effective against Strep. equi, but is not usually recommended. In most cases the disease runs its course and the horse recovers fully without antibiotics.

However, some horses develop complications known as bastard strangles. Here the Strep. equi enter the bloodstream and cause abscesses and infections in other parts of the body. These horses can have pneumonia, pleuritis, guttural pouch infection, and sometimes a complete obstruction of the respiratory tract occurs. The researchers also found that some mares with severe strangles fail to produce milk for their foals. One very serious complication of strangles is purpura hemorrhagica in which the animal develops a hypersensitivity reaction to Strep. equi. Its legs swell and on occasion an excessive amount of skin can be lost from the lower limbs. This can be so severe that the horse has to be humanely destroyed.

Strangles and the complications arising from it cause a great deal of expense for the horse breeder. Extra manpower is required to care for the sick animals since a lengthy period of time and additional space have to be provided to isolate the sick horses.

"When we began the study, little epidemiologic data were available," said Dr. Sweeney. "We had been thought that once a horse recovered from strangles that it could be put back with the other animals. We have found otherwise."

The field study was designed to determine how long affected horses remain carriers and whether horses which show no sign of the disease can be asymptomatic carriers. Researchers also wanted to know the duration of the disease as well as the spread on a given farm. They wanted to document the number of complications and the mortality due to the disease.

Horses with strangles were identified and examined at four farms. The team took cultures from nasal swabs, throat swabs and lymph nodes, and serum samples were drawn every week. In addition to the animals on the farms, mares and foals returning from other breeding farms where they were exposed to strangles were cultured weekly. The tests were designed to identify asymptomatic carriers and to identify horses which might be incubating the disease.

The New Bolton Center team studied 589 horses of which 245 had been exposed to the disease. Of these, 94 showed signs of strangles. Six horses died from complications. The team found that horses, contrary to belief, could be infectious for up to four weeks after they had recovered from strangles. "We strongly recommend that all horses that have strangles be kept in isolation for four weeks after they have recovered, or until three weekly cultures are negative," Dr. Sweeney stated. "Horses that return from breeding farms where they may have had strangles should be kept in isolation for four weeks or until these cultures are negative."

The researchers did find that cultures are not the absolute test. "We could grow the organism in only about 60 percent of the cases, even though the animals exhibited all the signs of the disease," Dr. Sweeney said. "The preferred sites for taking culture samples are the lymph nodes. We were less successful in isolating the Strep. equi from swabs taken from the nasal passages or the throat area." It was found that none of the animals treated with antibiotics had a positive culture.

The team found that the asymptomatic carrier state is virtually nonexistent. The mares and foals returning from farms where they were exposed to strangles were cultured repeatedly. "We could not isolate Strep. equi from these animals," Dr. Sweeney said. "There has been a report of the incidence in Colorado which appeared to be an asymptomatic carrier. Strep. equi could be isolated from his nasal passages, though he was not ill. He was an oddity and we think that the spread of the disease via asymptomatic carrier is remote."

Strangles is spread through contact with the mucous nasal discharge. "Horses are social creatures, they congregate in the pastures, they nuzzle one another and they graze in the same area," she said. "It is hard to keep them apart, so the organism is spread from horse to horse through direct contact. At a future date the New Bolton Center team hopes to study various disinfectants to determine which is the most effective. Right now the recommendation is to avoid overcrowding for horses and to isolate any horses which show signs of the disease.

The study also found that foals from dams with strangles could be protected from the disease if they were given antibiotics prior to showing any evidence of strangles. It was found that once this preventive measure was discontinued the incidence of strangles among foals was lower than among foals which had not received the drug.

The study is not completed yet. The researchers have developed an ELISA test and they will study the serum collected to determine the antibody titers of the affected horses. It is known that such titers develop when a horse has strangles but it is not known whether this protection is passed along passively to the foals. This is one question which will be investigated.

The team also plans vaccine trials with subsequent ELISA testing to determine the degree of immunity a horse can obtain from vaccination. Another aspect of the study is to determine how long Strep. equi can survive in the environment and under what conditions. Though the horse breeder may be able to prevent the spread of the disease by eliminating conditions favorable to the organism.

Hopefully these further studies will point the way toward prevention and elimination of strangles, easing the burden for the horse breeder.

The investigators from the department of clinical studies at New Bolton Center are Corinne R. Sweeney, D.V.M., Robert H. Whitlock, D.V.M., Ph.D., and Charles E. Benson, Ph.D. They are helped by research technicians Mary Bannister, Suzanne Whitlock, and Stephen Barningham. Additionally, Dr. David Miers, an equine practitioner from New Jersey, helped coordinate the field study. Helma Weeks
Dr. Carl E. Anzano, associate professor of pharmacology, and toxicology, and head, Laboratories of Pharmacology and Toxicology, was recently installed as president of the American Academy of Veterinary Pharmacology and Therapeutics. The Academy is an international organization of veterinary pharmacologists from academia, industry, and governmental regulatory agencies.

Dr. Adrian R. Morrison, professor of anatomy, serves as a member of the National Research Review Board of the Medical College of Pennsylvania. The College is a leading research center in mental health and the neurosciences. The National Research Review Board is comprised of internationally recognized researchers.

Dr. Vincent J. Cristofalo, professor of biochemistry and director, Center for Aging, is the recipient of the 1985 Bellwether Award, which includes a grant of $25,000, funded by the Bankhead Foundation of New York City, and recipients are selected annually by the Gerontological Society of America. Dr. Cristofalo is a pioneer in biological gerontology and his research on age-associated changes in cell growth has been recognized internationally as providing one of the major advances in the study of aging in the last fifteen years. Most recently he has studied the effects of growth factors and hormones on cell replication and on the life span of cells. This research has established that hydrocortisone, a naturally occurring hormone, modifies the age of cells and indicates, in principle, that the aging of cells is not irrevocably fixed, but can be delayed. Dr. Cristofalo is the author of more than 80 publications and he has authored eight books on cellular aging.

Dr. Kenneth C. Bower, cornell R. and Henry Bower Professor of Medicine (Nephrology), and chairman, Department of Clinical Studies, Philadelphia, has been appointed visiting professor in the Department of Veterinary Medicine at the University of Queensland, St. Lucia, Queensland, Australia. In this appointment, Dr. Bower will give lectures and participate in seminars for a one-month period in the Spring of 1984. He will also conduct some research in his field of nephrology. Dr. Bower is editor of a recently published textbook, "A Cambridge-Harvill Publishing Co., Media, PA., 1983." The book provides a comprehensive coverage of diseases of the kidneys, and also contains excellent sections on physiology and pharmacology.

VHIP recently received accreditation, with full accreditation privileges, from the American Animal Hospital Association.

Dr. David F. Kowalenko, assistant professor of pharmacology and toxicology, spoke at the annual meeting of the American Society for Pharmacology and Therapeutics in August 1983. His talk was titled "Use of Animals to Monitor the Environment."

Dr. Syed Kasim, assistant professor of veterinary medicine, attended the annual Congress of the American Veterinary College of Pennsylvania in December 1983, in New Delhi, India. Dr. Kasim won a travel grant from the Indian Veterinary College Research Unit, New Bolton Center.

Dr. Lawrence R. Soma, professor of anesthesia, was appointed to the Pennsylvania State Board of Drugs, Cosmetics and Devices, and to the National Association of State Racing Commissioners, Veterinary Chemists Advisory Board.

Dr. Lin V. Korn, associate professor of anesthesia, was an invited speaker at the International Symposium on Neurorvascular Blocking Agents, held in Boston, Massachusetts, in August 1983.

Dr. Sherwin E. Ostreich, (V '63) will be installed as president of the Pennsylvania Veterinary Medical Association in January 1984.

Dr. James W. Buchanan, professor of medicine, in addition to his heavy schedule in teaching, research and clinical work, finds time to supervise a very worthwhile outreach activity. He sponsors an Explorers Scout Post at the Veterinary Hospital of the University of Pennsylvania (VHIP). The program provides in-depth career information about the veterinary profession for students in the ninth to twelfth grade. Meetings are held monthly in the hospital and include guest speakers, films, panel discussions, and tours of the hospital. The program is educational, and interested students may contact Dr. Buchanan at 809-8600.

Dr. Fred R. Bode, (V '58), contributes in many ways to activities in the Veterinary School. Among other activities, he annually hosts the interns and residents of VHIP with a picnic at his home. This is part of the liaison program between local preceptors and the Hospital staff. Thanks Fred!

Dr. Darrell R. Bier will speak on the subject of Veterinary Radiology during the Continuing Education Course, sponsored by the Veterinary Ski Association. The meeting will be held in New York, Vermont, on February 26-29, 1984. For further information and or registration contact Doctor L. H. Johnson, 512 University Avenue, Madison, WI., 53705, or Dr. Tom Maddox, 245 East Cleveland Avenue, Newark, DE., 19711. Telephone 302-373-4000.

Dr. Alan M. Beck and Aaron Katcher have recently published two books concerned with the rapidly developing field of animal-human relationships. "View Perspectives on Our Lives with Animals," University Press of Philadelphia, Philadelphia, 1983, and "Between People and Pets," Putnam, New York, 1983. Dr. Beck is associate professor of clinical medicine and is director, Center for Interactions of Animals and Society, and Dr. Katcher holds an appointment as assistant associate professor of psychiatry and has an appointment in the Medical School and the Dental School. On October 27-28, 1983, Drs. Beck and Katcher attended an International Symposium on the Human-Pet Relationship at the Austrian Academy of Science, Vienna, Austria. The symposium, attended by about 300 people, was held on the occasion of the eightieth birthday of Professor Dr. Conrad Lorenz, internationally known authority in the field of ethology. They presented a paper entitled "Safety and Intimacy: Physiological and Behavioral Responses to Interaction with Companion Animals."
FOURTEENTH ANNUAL SYMPOSIUM

The Fourth Annual Symposium, "Your Veterinarian and Your Dog," will be held on Saturday, January 28, 1984, at the Veterinary Hospital of the University of Pennsylvania (VHUP), 3850 Spruce St., Philadelphia, PA.

DISEASES OF THE JINT will be the topic of our visiting speaker, Alan J. Lipowitz, D.V.M., M.S., University of Minnesota, College of Veterinary Medicine, St. Paul, Min.

RECOGNIZING AND CONTROLLING GENETIC DISEASES OF DOGS will be discussed by Donald F. Patterson, D.V.M., D.Sc., Charlotte Newton Shepard (Professor of Medicine and Chief, Section of Medical Genetics, University of Michigan), and Dr. Lipowitz.

DISEASES TRANSMISSIBLE FROM DOGS TO HUMANS will be discussed by Lawrence Glickman, V.M.D., Ph.D., Associate Professor of Epidemiology and Head, Section of Epidemiology, and Carl E. Kirkpatrick, V.M.D., Ph.D., Lecturer in Parasitology, University of Florida.

CUNPERS is the topic of Alan M. Klein, V.M.D., Associate Professor of Anesthesiology.

The program will begin at 9:30 a.m. with a question-and-answer session. Questions may be submitted in advance. The cost, including lunch and parking, is $25. Attendance is limited to 200.

We wish to thank Karl Kan for their support.

For further information and reservations, contact M. Josephine Deubler, V.M.D., VHUP, 3850 Spruce St., Philadelphia, PA 19104. Telephone (215) 898-8862.

WELCOME TO THE ALUMNI AND CONTINUING EDUCATION CORNER!!

This is the place to look for news about professional and pre-professional education programs, and information about your classmates and upcoming alumni events.

CONTINUING EDUCATION

The 1984 Penn Annual Conference brochure is in the mail. If you have not received a copy yet, please call me at (215) 898-8862 and a copy will be sent.

THURSDAY January 26 and FRIDAY January 27, 1984, at the Franklin Plaza Hotel, 17th and Vine Streets, Philadelphia.

Because of the October Scientific Program to be held in Philadelphia in conjunction with the School's Centennial on October 15, 16, 17, 1984, the School's professional continuing education program has been suspended from January 1984 to December 1984. Programs will resume in January 1985. You will receive more information about this Conference in the future.

ALUMNI NEWS

The Veterinary Medical Alumni Society actively represents all graduates of the School. The Executive Board meets five times a year to discuss and act on issues that affect the alumni body. Dr. Kenton Stokoski, V.M.D., is this year's President. You are urged to submit suggestions, ideas, and comments. The Society acts as a two-way conduit, allowing the alumni direct access and input to the School's administrative body and its policies and encouraging a continuous flow of information from the School to the alumni. Your voice can be heard through the Alumni Society.

At each VMAS Meeting, a guest faculty member presents a report on events occurring within the School. At the September meeting, Dr. Rebecca Kirby spoke about some of the exciting changes occurring in the Small Animal Hospital's Emergency Service. Here is her report:

Dr. Rebecca Kirby, Dr. Kirby is a graduate of the University of Missouri. She did her internship at Purdue University and her residency at the University of Florida. Dr. Kirby is an Assistant Professor of Medicine and Director of the School's Emergency Service.

Dr. Kirby spoke about the University of Pennsylvania School of Veterinary Medicine's Emergency Service in an academic environment that offers seven-day, 24-hour emergency service. One-third of the total hospital inpatient caseload arrives through the emergency service. The service sees 300-600 cases per month and receives approximately 200 telephone calls per day—calls that include: general information, medical information, and counseling.

Monday through Friday, two interns are on duty (from 6 a.m. to 6 p.m., on weekends three interns are on eight-hour duty shifts. Two Emergency Service clinicians are on duty—one of the two is available every night. This increased coverage has resulted in a much reduced morbidity and mortality rate. In addition, receptionists and technicians are on duty at various times as well.

Practical. Telephone Guidelines have been established for the Veterinary Students and the Harcum Veterinary Technician students. Six rotating students on eight-hour shifts are taught to see and manage cases in a problem-oriented method. Junior students also participate in the program on research projects. A very competitive volunteer program is available for pre-veterinary students. An externship program has been developed with students from Washington State and Minnesota participating. The visiting students stay with students from our School. It is hoped that this program will expand to students at other veterinary schools.

The Emergency Service has established its own clinical laboratory and pharmacy. The lab ensures a quick data base on all emergency cases. A "check" system has been developed whereby outpatients are called back within 24 hours to see the animal progressing. Jamie Quackenbush (the School's social worker) is informed in the event that an animal is euthanized or dies. Emergency Service clinicians speak with practitioners rather than the interns or students. This policy has been developed to ensure proper information is given to the practitioner and allows the Emergency Service clinician on duty to be aware of, and responsible for, any incoming cases. Clinicians who refer cases into emergency service are encouraged to call the service within 12-24 hours to ascertain the condition of the animal since it is not always possible for the clinician on duty to call the referring practitioner. Postcards are sent within 24 hours to the practitioner with a tentative diagnosis and planned tests.

The examination fee is $38, and the average cost per case is $80. If the client is indigent, life-saving care is given to the animal.

Winter 1983 15
**Centennial Celebration!**

A Residency in Emergency Service at the School is being planned. This will be a two-three year residency rotating through anesthesia, cardiology, neurology, medicine, and surgery, as well as emergency medicine.

**ALUMNI EVENTS—1984**

Alumni Day will be held on May 19, 1984, in Philadelphia. The buildings surrounding the old courtyard area have been renovated as basic science laboratories. In celebration of the School and the contributions of our alumni, a special ceremony will be held re-dedicating the quadrangle entrance as ALUMNI ARCH. In addition, if you graduated during a year ending in a "4" or "9," this is your REUNION YEAR. Class agents have been contacted and we are planning a great celebration for all. The Class of 1944 (via Dr. William Foster) is planning its 40th Reunion with cocktails and dinner on Friday, May 18, 1984.

We hope you will all come out for the School's 100th Birthday and join the fun.
Ashra P. Markowitz, Director
Continuing Education and Alumni Affairs

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**VETERINARY ALUMNI AWARD OF MERIT**

The Veterinary Medical Alumni Society solicits suggestions for nominees for Alumni Awards of Merit. Among the criteria for nominations:

- Scientific contributions to the advancement of knowledge within biomedicine
- Contributions to the welfare of animals through public education of animal owners
- Contributions to society through civic activities which foster the advancement of the profession and the good name of the University.
- Perception of the individual by peers within the profession and community.
- Data in support of nominations should be submitted to:
  - Alumni Office
  - University of Pennsylvania
  - School of Veterinary Medicine
  - 3800 Spruce Street
  - Philadelphia, PA 19104.

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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.

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**VHUP REFERRAL**

**PRACTITIONERS LIAISON PROGRAM**

During the past four years the VHUP staff and local practitioners have engaged in a program to improve relationships. Three meetings are held annually. The spring meeting involves a discussion of policies and procedures between the VHUP staff and officers of local veterinary associations. This meeting was responsible for developing the new referral forms used for referred admissions to the hospital. The fall meeting takes the form of a picnic at Dr. Fred Rude's home. This is sponsored by four cooperating veterinary associations and is for the interns and residents at VHUP. Little business is transacted at this time—pleasure is the order of the day. The winter meeting is a buffet dinner held at VHUP for local practitioners. At this gathering the VHUP staff explains policies and procedures of the Hospital and on occasion clinical presentations are made on topics of current importance. All of these low-key, informal meetings have contributed significantly to improved communications and a better understanding of the services offered by VHUP.