



7-1-1984

Cats Too Can Have Heartworm

Helma Weeks
University of Pennsylvania



Mrs. Grace L. Lambert and Dr. Leon P. Weiss.



Mrs. Elizabeth C. Clark, Sheldon Hackney, Mrs. Grace L. Lambert



Dr. Robert R. Marshak and Dr. Leon Z. Saunders

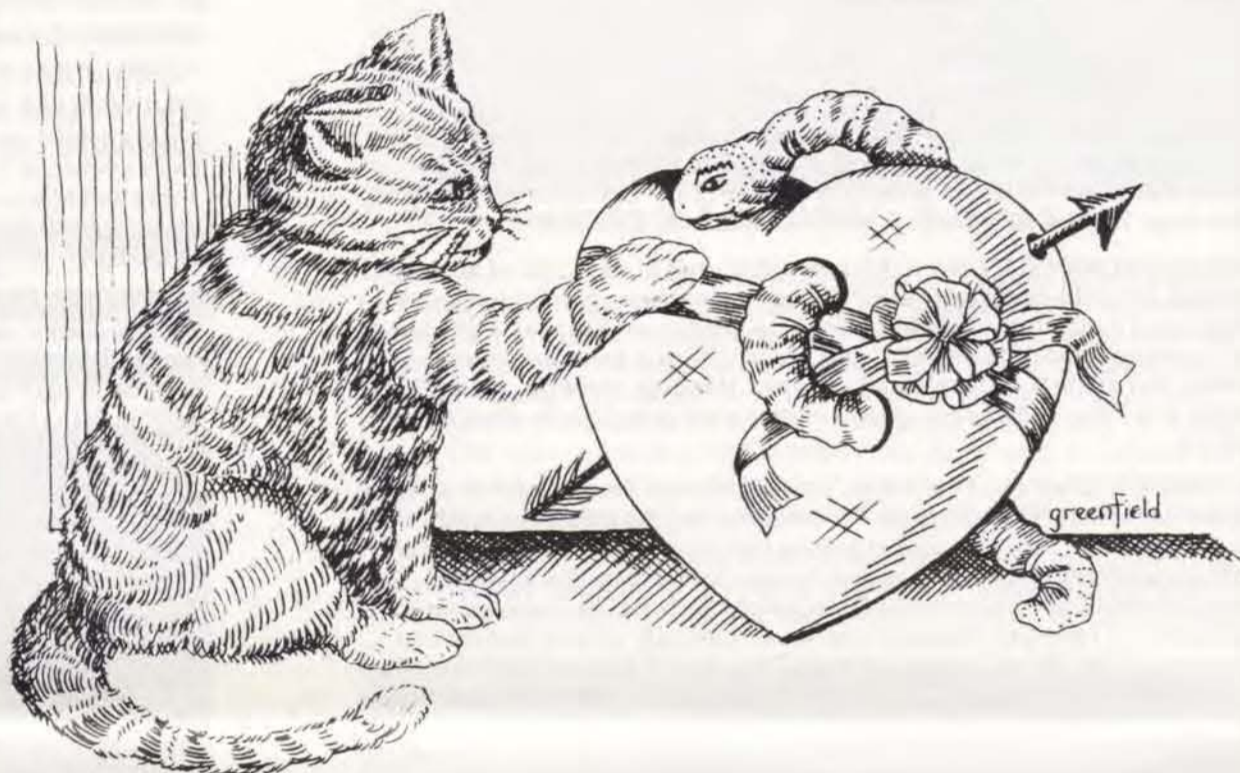


Dr. George C. Poppensiek and Mr. Charles S. Wolf



Dr. Mark W. Allam congratulates Dr. Leon Z. Saunders

CATS TOO CAN HAVE HEARTWORM



HEARTWORM infection, a disease commonly affecting dogs, is also seen in cats. "Cats are not equally at risk with dogs," explained Dr. David Knight, Chief of the Section of Cardiology at the University of Pennsylvania's School of Veterinary Medicine. "But heartworm disease in cats is probably more prevalent than we think, particularly in animals which live outdoors."

Unlike dogs, cats are not regularly tested for heartworm disease, nor are they maintained on preventive drugs. The presence of heartworm is difficult to detect in felines. "In infected cats microfilariae are generally found in low numbers or are absent entirely," said Dr. James B. Lok of the Laboratory of Parasitology at the School. "Cats are relatively inefficient hosts for *Dirofilaria immitis*. Infective larvae may mature but in many cases they do not reproduce well in the cat." Laboratory studies found that heartworm can reproduce in felines but that production of microfilariae is frequently suppressed by the cat's immune system.

Heartworm is spread by mosquitoes, an intermediate host necessary for the development of the parasite. Adult heartworms live in the pulmonary arteries and the right ventricle of the host animal, and can cause severe interference with the pulmonary circulation and function of the heart. Female worms give birth to live motile embryos called microfilariae which are released into the circulatory system of the host. They are carried to the capillaries close to the surface of the skin. From here they are ingested

by a mosquito taking a bloodmeal. The microfilariae develop through three larval stages in the mosquito's body before they are capable of entering a mammalian host through the bite wound the mosquito makes upon taking another bloodmeal. The larvae undergo two more molts before reaching a juvenile stage when they take up residence in the cardiovascular system. There they mature and begin to reproduce.

Cats with heartworm present various signs of illness, relating to cardiopulmonary disease and some, like vomiting, which ordinarily do not suggest such problems.

According to Dr. Lok, 15 to 25 percent of infected dogs can be expected to develop an occult infection in which microfilariae produced by the adult heartworms do not reach detectable levels in the blood. In the cat the rate of occult infection is much higher, making diagnosis difficult by the commonly used tests to detect microfilariae. The veterinarian may detect the disease in cats by alternative methods using the ELISA (enzyme linked immunosorbent assay) or by radiographing the chest. The

ELISA detects antibodies against *D. immitis* and radiographs are useful for identifying signs of pulmonary vascular disease which are characteristic of the infection.

"Cats can be treated for heartworm," said Dr. Knight. "The disease is managed the same way as in dogs." According to Dr. Knight there is no reason why cats cannot be placed on the preventive, though it must be kept in mind that the animal has to be free of microfilariae before the drug can be given.

Cats with heartworm present various signs of illness, relating to cardiopulmonary disease and some, like vomiting which ordinarily do not suggest such problems. "If suspicious the animal should be carefully examined and an ELISA performed if microfilariae are not found before ruling out heartworm disease," said Dr. Knight. He stated further, that while the disease was not as severe a problem as in dogs, the practitioner should be aware of it and be looking for it. "We really should be paying more attention to it, as it is out there." If heartworm is detected early, the treatment is fairly simple and the animal can live a normal life. For dogs, the early detection has paid dividends since, according to Dr. Knight, the clinic now rarely sees animals with severe damage due to heartworm disease.

Helma Weeks

CENTENNIAL YEAR AFFAIRS

Since October 2, 1884, marks the founding date of the School of Veterinary Medicine, it follows that a number of affairs are scheduled for the month of October 1984. Here is a list of major events for this exciting month:

Monday, October 1.

AWARDING OF CENTENNIAL MEDALS. The Veterinary School will award Centennial Medals to eighteen individuals in recognition of their outstanding contributions to veterinary medicine. The ceremony will take place at 5:15 P.M. in the Rainey Auditorium of The University Museum of the University of Pennsylvania and will be followed by a reception.

Tuesday, October 2.

FOUNDERS DAY DINNER. Plans are now being finalized for this affair which will recognize the founding of the School in 1884.

Thursday, October 4.

MAN AND ANIMALS—LIVING, WORKING AND CHANGING TOGETHER. An exhibit at The University Museum of the University of Pennsylvania. This exhibit presents the fascinating story, beginning more than 10,000 years ago, of man's role in the domestication of the dog, horse, cow, and cat. The central theme of the exhibit will portray the ways in which man influenced the biological variations and observable changes in these and other animals as civilization developed. Interwoven in the exhibit will be a portrayal of some of the contributions of the School of Veterinary Medicine in this process. The exhibit will be open to the public through June 1985.

Monday, October 15.

UNIVERSITY CONVOCATION. The University of Pennsylvania will award honorary degrees to nine individuals in a ceremony held in The University Museum of the University of Pennsylvania.

Monday, October 15 through October 17.

CENTENNIAL SCIENTIFIC PROGRAM. An outstanding array of speakers will present papers on both applied and basic science. A printed program will be available in the near future.

Tuesday, October 16.

BIRTHDAY PARTY. This will be the fun event of the year. The Party, held at the First Troop Cavalry Armory, 3rd and Chestnut Streets, Philadelphia, will be strictly informal and will feature on Old Philadelphia theme, with Philadelphia-style food, drinks, and dancing. Everyone is invited. Tickets (\$30 each) are now available in the Centennial Office of the Veterinary School. Watch for more detailed information.

Wednesday, October 17.

"A 100-YEAR JOURNEY—AN EVENING WHEN THE PAST MEETS THE PRESENT." The organization of Minority Veterinary Medical Students will sponsor a cocktail-dinner to honor Dr. Jane Hinton (V'49), the first black woman graduate of the Veterinary School, and Dr. John B. Taylor (V'08) the first black graduate. Time and place to be announced. For information call the Centennial Office, 898-1475.

Sunday, October 21 through October 23.

ANNUAL MEETING OF THE AMERICAN COLLEGE OF VETERINARY RADIOLOGY. See announcement under Rosettes and Ribbons.

INTERNATIONAL CLUB

Many of us have chosen veterinary medicine for careers because we care about the quality of lives. Those of us who are also adventurous would like to work abroad. In the interest of these pursuits, University of Pennsylvania Veterinary Students have formed the International Club. So far, we have been very successful at building a substantial membership, forming a network with International Clubs at other veterinary schools, and providing information, through lectures and newsletters, about the worldwide situation of veterinary medicine. Students' interests in international veterinary medicine has surfaced since the inception of our club. In light of this newly discovered enthusiasm, I am sure there are other students and faculty members who could contribute to the fulfillment of our club's goals. We would greatly appreciate you sharing your experiences with us.

Barbara Flickinger
Senior Student

A Legacy and A Promise

by John Martin, V.M.D.

A book to treasure, read and pass down for years to come. A "must" for all graduates, alumni, faculty, friends and animal lovers of all ages. Lists all graduates and faculty since 1884!



Here is my order for _____ copies of the 100-Year History, *A Legacy and A Promise*.

- Enclosed is my check for \$ _____ (\$27.95 each pre-paid).
 Bill me on delivery (\$27.95 each).

Name _____

Address _____

City _____ State _____ Zip _____

Centennial Office
UNIVERSITY OF PENNSYLVANIA — SCHOOL OF VETERINARY MEDICINE
3800 Spruce Street Philadelphia, Pa. 19104