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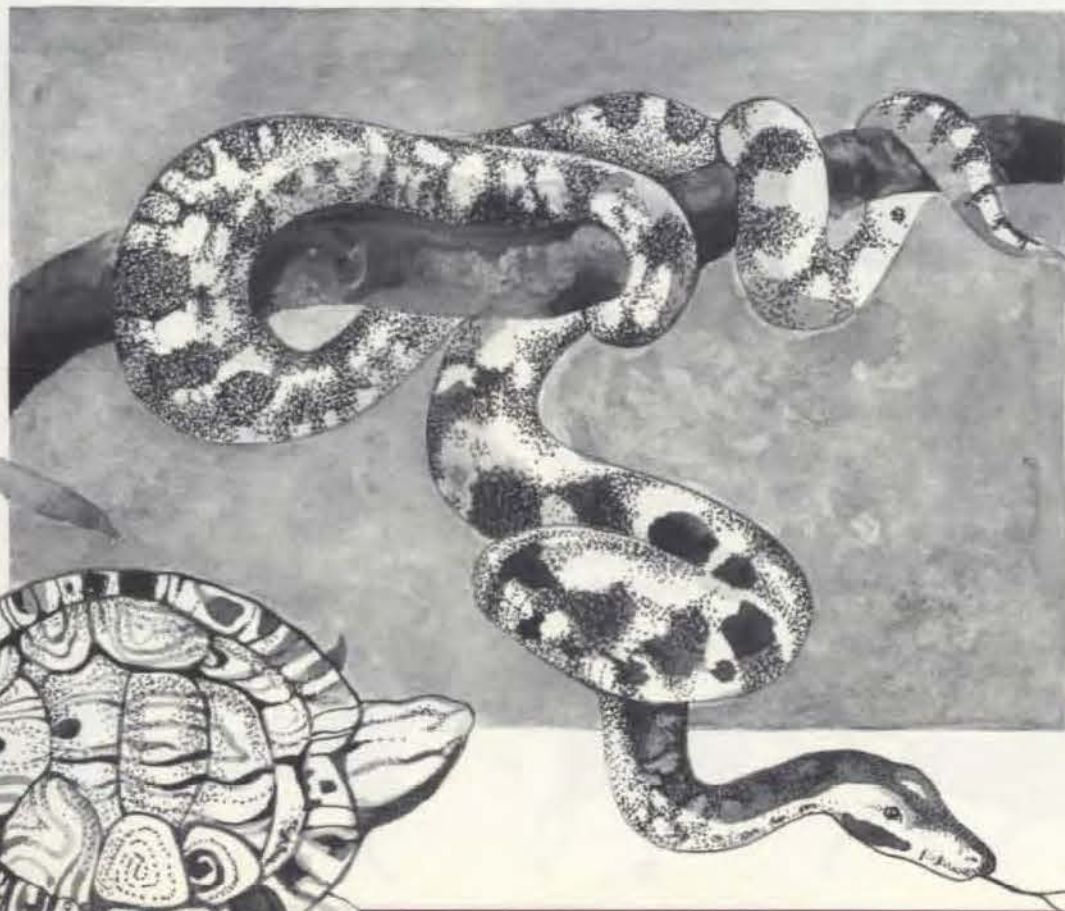
Not just dogs and cats, but birds, turtles, and other exotic animals

One evening each week, owners of avian, mustelids, reptiles, amphibians, rodents, rabbits, and monkeys come to VHUP for the exotic animal clinic. If an emergency occurs, these animals are brought in at other times, VHUP has a very active exotic animal clinic, about 5 percent of the total case load is in such pets. But that is not the School's only involvement with exotics; there are strong ties with the Philadelphia Zoo. In the clinic, Dr. Wilbur Amand (V'66), vice president of animal programs at the Philadelphia Zoo, and Dr. JoAnne Garbe, the School's first resident in exotic animal medicine, see these pets. The School also offers, in cooperation with the zoo, a second residency program. The resident in this program is Dr. Michael Barrie.

"Exotic animals have to be handled differently than dogs or cats," said Dr. Garbe. "You cannot tell a bird to sit or lie down; you have to restrain it, and that adds to the stress." This sentiment is echoed by Dr. Barrie, who explained that even a simple blood test for many of his patients requires sedation. "You don't just walk up to a tiger and take blood." As sedation is stressful, the veterinarians rely heavily on observation, either by the owner, as Dr. Garbe does, or by the keeper, in the case of the zoo animals.

"Birds are a large component of our patients here at VHUP," said Dr. Garbe. "We see exotic birds and sometimes domestic ones." She explained that many of the problems encountered in exotic birds are due to poor nutrition which predisposes them to disease. Often, birds have feather problems. "Birds are very responsive to change," she said. "They get upset and start picking their feathers. Before you know it, you can have a serious problem." Birds are susceptible to bacterial and viral diseases as well as parasites. One problem in treating birds is that the animals have very little blood. Any test performed must be done with a few drops rather than than cc's of blood.

Dr. Garbe and Dr. Amand not only treat parakeets, cockatoos or parrots, but also swans and ducks. One of the patients, a domestic duck, was rescued from drowning when it was just a day old. It



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Exotic Animals

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has been a sickly animal, suffering from aspergillosis, a fungus infection. "The owners have developed a very strong bond with the bird, just like one would expect with a cat or dog," Dr. Garbe said. "They have airconditioned a room for it, and they have borne the expense of treating it. It was in ICU once for three weeks and once for 10 days on another occasion. Treatment so far has cost over \$2,500. Now we have the aspergillosis under control, and the duck is doing very well. If everything goes right, it can live for eight to ten years."

Other patients Dr. Garbe sees are ferrets, very popular pets. "They are nice animals, though they need to be descented. They can be housetrained and they are very affectionate." Rabbits are also among her patients, as well as turtles, lizards, snakes, guinea pigs, and hamsters. "Turtles are a challenge. You cannot listen to their hearts; often a radiograph is the only way to get a clue."

Exotic animals at VHUP sometimes need surgery. They are cared for in the ICU unit when required, and they have their own special ward. "When we treat exotic animals, proper restraint is an important issue. They must be held in a special way. If surgery is needed, anesthesia requires special attention, particularly in birds, as their respiratory system is different."

Zoo animals receive the same special care. "When a problem is recognized, we often watch the animal for a few days," Dr. Barrie said. "Treating animals at the zoo invariably involves restraint or sedation, so you proceed cautiously." He explained that the rhinoceros mother which gave birth earlier this year was monitored by closed-circuit television, and a detail of zoo veterinarians was on call. "We watched for a week, but it was her keeper who told us correctly when the night would be. Everything went well and the mother did not require assistance."

He explained that some animals are not allowed to breed in captivity. "The lions here have not been allowed to breed because of overabundance of lions in zoos. The females are implanted with a time-release hormone implant. The male wolf was vasectomized, as he is in a pen with his siblings." How-



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exotic animals are more difficult to treat. "They often mask their symptoms until it is too late," said Dr. Barrie. "In this field, you have a lower percent success treating seriously ill patients than you do with domestic animals. There the success rate is much higher."

Both feel that much research is needed in the field. "I would like to see intensive care service for these animals similar to that given to dogs, cats, and other domesticated animals," said Dr. Garbe. "But before this can happen, much basic research is needed in a multitude of exotic animal species."

"Zoo medicine has flourished during the last 10 to 15 years," said Dr. Barrie. "There is now a concentrated effort to obtain more basic information and to conduct more studies." The Philadelphia Zoo has been at the forefront of research. The Penrose Research Laboratory, located at the zoo, has been involved in a great variety of studies including developing Zoocakc, a special feed for zoo animals. Necropsy records exist dating back to 1902, and necropsy reports and tissue blocks are kept on every animal that died at the zoo going back to 1933. Dr. Barrie explained that research with exotic animals is often difficult because of the small numbers of individuals available. Information is gathered slowly, often only after death.

Basic information is lacking. Dr. Garbe is engaged in a project to establish blood gas values and the acid/base levels in birds. This information may be helpful with an intensive care patient.

Dr. Garbe graduated from Washington State University and, while there, was active in exotic animal and wildlife programs. She served an internal medicine internship in a large California practice and came to Penn in 1984. Dr. Barrie is a graduate of Michigan State University. He was in private practice for three years: one year in California and two in a New Jersey small animal/exotic practice. He is in his second year of the zoo residency. During his first year, he spent half of his time at the School, rotating through the services at the small and the large animal hospitals.

—H.W.



ever, there are other species at the zoo for which the veterinarians will go through great lengths to ensure offspring.

Sometimes such offspring involve a great deal of work and heartbreak in the end. "I raised a kangaroo recently. It was rejected by its mother, possibly because of a fractured leg. We kept it in an artificial pouch fashioned from a leatherbag, and it was fed around the clock. It did well for a couple of months and then died at the time of weaning. It was very frustrating." Toxoplasmosis and other diseases are frequently introduced into the zoo through stray animals which come from the surrounding urban areas. "We trap a lot of cats and dogs as well as wild-

life. The wildlife is checked for rabies, and cats and dogs are turned over to the SPCA."

The School and the Philadelphia Zoo work together closely. While it has its own veterinary staff, the zoo on occasion takes animals to VHUP or New Bolton Center. "We will frequently consult a surgeon or other specialist from the School to help with a case."

Both Dr. Garbe and Dr. Barrie pointed out that