

Myths endanger rattlers

By RICHARD HEIDORN JR.
Collegian Staff Writer

"Thwap!" Biology professor William Dunson holds a mouse by its tail then slaps it down onto the counter, braking its spine like a bar of Turkish taffy. He drops the still twitching rodent into an aquarium where a medium-sized snake, just arrived from India, waits.

Feeding concluded, Dunson leads the way from the lab to his office where he will try to explain why he and a graduate student have undertaken an unlikely task — preserving from extinction what is thought to be one of the most ornate creatures in the United States — the timber rattlesnake.

Conservation of wild animals has been an increasingly popular cause, but when the animal to be saved is a potentially harmful one, the crusade is bound to be an uphill fight.

"Working with rattlesnakes is not like working with other animals," graduate student John Galligan admits. "People are not neutral about rattlesnakes."

Slight understatement, that. Few creatures have inspired as much fear and loathing in American popular culture as the rattlesnake. According to Dunson, however, cowboy movies that have depicted the rattler as a villain prone to unprovoked attacks on unwary persons are wrong.

"More people are killed by bees every year," he says. "There hasn't been a death from a rattlesnake bite in Pennsylvania in years."

In fact, says Dunson, humans are more a threat to rattlesnakes than the other way around. The snakes, which once populated much of the mountain woodlands of the eastern seaboard, have been wiped out in most of these areas and in Pennsylvania and parts of New York find their last refuge before extinction.

In Pennsylvania, the Society for the Study of Amphibians and Reptiles has placed the timber rattlesnake on its list of endangered species and is recommending state protection of the snake.

For their part, Dunson and Galligan have undertaken what they say is the first detailed study of the timber rattlesnake ever made. The study, they hope, will overcome the misconceptions they see as one of the biggest obstacles

to the protection they seek for the snakes.

Legend has it, for example, that the female rattlesnake bears as many as 90 snakes in a litter and that she has two litters every year.

Dunson says research conducted thus far indicates the rattlesnake actually has only six to eight young once every two years. Of these young, not all will survive the six to seven years to maturity. "If you kill the adults, you exterminate the entire population," Dunson says.

Because of the way stories of rattlesnake encounters are passed around, Dunson said, people think there are more rattlesnakes than there really are. Hunters familiar with the snakes say they know of only two or three dens still used by the snakes while there used to be dozens.

Dunson says he hopes his study will make people aware of the extinction danger rattlesnakes face. That, however, doesn't make the rattlesnake any more amiable to most people. The question people are likely to ask is: why bother with the rattlesnake, anyway?

The timber rattlesnake is of no scientific value, Dunson and Galligan agree. The few snakes used in medicine to produce anti-venom are not the Pennsylvania variety but the larger sort found in western states.

"One of the hardest questions I get asked is 'what good are they?'" Galligan says. "Well, what good is the whooping crane? Animals don't have to be good for anything."

It is understandable that hikers and campers should believe that "to kill a snake was a service," Galligan says. "But the idea that something should exist only if it is useful to us is pretty immature."

"You can't have a wilderness without the natural complement of animals that are there," Dunson agrees.

But the biggest threat to the snakes has come not from the camper or hiker who can simply avoid the snake, but from organized snake hunts that are popular fund raisers throughout Pennsylvania, Dunson says.

The money raised from the hunts goes to causes such as local fire departments and church organizations, but Dunson

says there are better ways to raise that money. The largest hunt, for example, raised \$6,500 but most of that was not from the hunt itself, but from food and carnival concessions, Dunson says. "They glorify idiocy," Dunson says of the hunters. Many prizes and trophies among which the most cherished sign of accomplishment is the "Sunken Fang Award", are given to hunters who have been bitten.

Two such awards were presented at a hunt Galligan attended recently in Morris, Pa. Most of the few bites reported every year, Galligan says, result from inexperienced persons handling the snakes at the hunts.

Snakes caught at the hunt are usually released, but not always where they were caught. Moving the snakes may be as harmful as killing the snakes outright, Dunson says, because it is not known whether they are able to find a new den and re-establish in unfamiliar surroundings.

Dunson said he has heard stories of hunters destroying the dens with gasoline or dynamite, a custom that persists despite the outlawing of the practice.

Dunson expects the influence of what he calls "the hunter mystique" to oppose his proposal to ban the killing or sale of the snakes. A similar proposal, Dunson says, was rejected by the Pennsylvania Fishing Commission last year after pressure by hunting groups.

Because the Commission receives all its funds from fishing, snake hunting and other license fees, Dunson says, the Commission has little interest in saving the rattlesnake. "They don't take the long-range view," he says. "The average fisherman doesn't care about rattlesnakes."

Many hunters who have learned of the extinction problem have given up rattlesnake hunting, however. Dunson says he is confident that he will be able to convince the Commission to adopt his proposal.

Eventually, there will be a "balance of those who want to exploit the resources and those who want to save them," he predicts. "Emotions are the biggest obstacle."

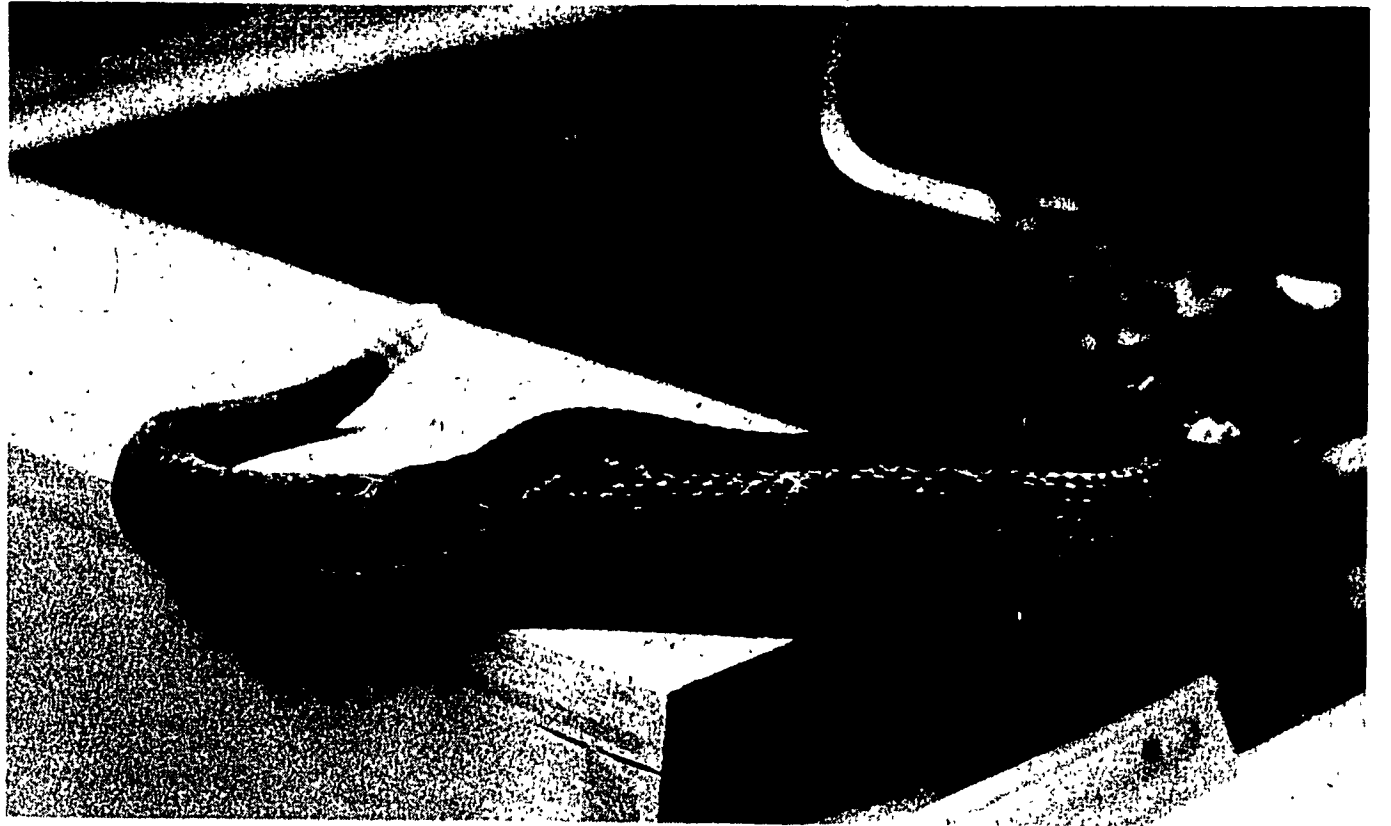


Photo by Richard Blum



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The timber rattlesnake (above) faces extinction, according to Penn State biologists, if precautions are not taken now. John Galligan (12th-biology) at right, demonstrates how the researchers properly lift the snakes from their aquarium-like homes.

the Collegian living

A weekly look at life in the University community

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Researchers interested in both science and arts

By LAURA SHEMICK
Collegian Wire Editor

Science labs probably seem dull and gloomy to most people, but the University's Materials Research Lab across University Drive from the Ice Pavilion is far from uninteresting. In addition to its many applied science projects, the lab fosters interest in the humanities by exhibiting sculpture, photography and paintings and by sponsoring events such as "Two-Culture Dialogues," informal discussions between scientists and artistically-inclined people.

The lab, while encouraging art and science to meet, spends a lot of time on research, too. It works on projects ranging from the development of high-density, long-lasting concrete to the development of artificial blood vessels.

The lab is partially funded by state and federal agencies and must specify certain "thrust" areas (projects of special interest) in order to qualify for the funding. The lab's current special interests include luminescent lighting, ferro-electric materials, highway materials such as concrete, biomedical materials and radioactive waste disposal.

The lab has a staff of more than 40 professors and other teachers from the

University to work on projects. According to Bruce Knox, vice-president for research at the lab, about 22 work mostly at the lab, and 25 work more at their own offices on campus. The staff members come from many fields within the general field of material science, including engineering, earth and mineral sciences, chemistry and physics. Graduate assistants from these colleges also work in the lab. According to Knox, some colleges actively recruit assistants for the lab but others tend to ignore it.

The lab does applied science research of non-organic, non-metallic substances, according to Knox, and is mostly paid for through contracts with the state and federal governments. Private industry makes a few contracts with the lab. The University partially subsidizes the lab by paying the salaries of the employees, Knox said.

The lab uses very complicated and usually expensive tools to aid its work, including electron microscopes, microprobes, x-ray machines (for x-ray crystallography), numerous furnaces and high-pressure chambers, and crystal-growing devices capable of growing small rubies.

"A couple of years ago," Knox reminisced, "the grad students here

were working away, making rubies to give to their girlfriends for Christmas."

Knox emphasizes that the lab, while connected with the University, does a great deal of work for many different interest groups.

"Sometimes we do research for groups we ordinarily don't work for, if the subject is interesting," he said, citing an analysis of the tools used by Hopewell Indians in Ohio. The lab ordinarily leaves common analysis work to service labs, "but this was interesting to us," Knox said.

The lab also works in advancing science education and is currently coordinating a national effort to completely catalogue material science books, articles and films for use in college mini-courses.

One of the more important projects the lab is working on right now is biomedical materials.

"We're interested in making bone replacements," Knox said. "Coral is similar to bone in structure — we use it as a mold to cast bone-like structures for use in the human body." The lab is also working on artificial blood vessels for use in replacing damaged arteries, besides developing pseudo-skin for use with burn victims and new artificial hearts for people with heart problems.



Photo by Andy Gumberg

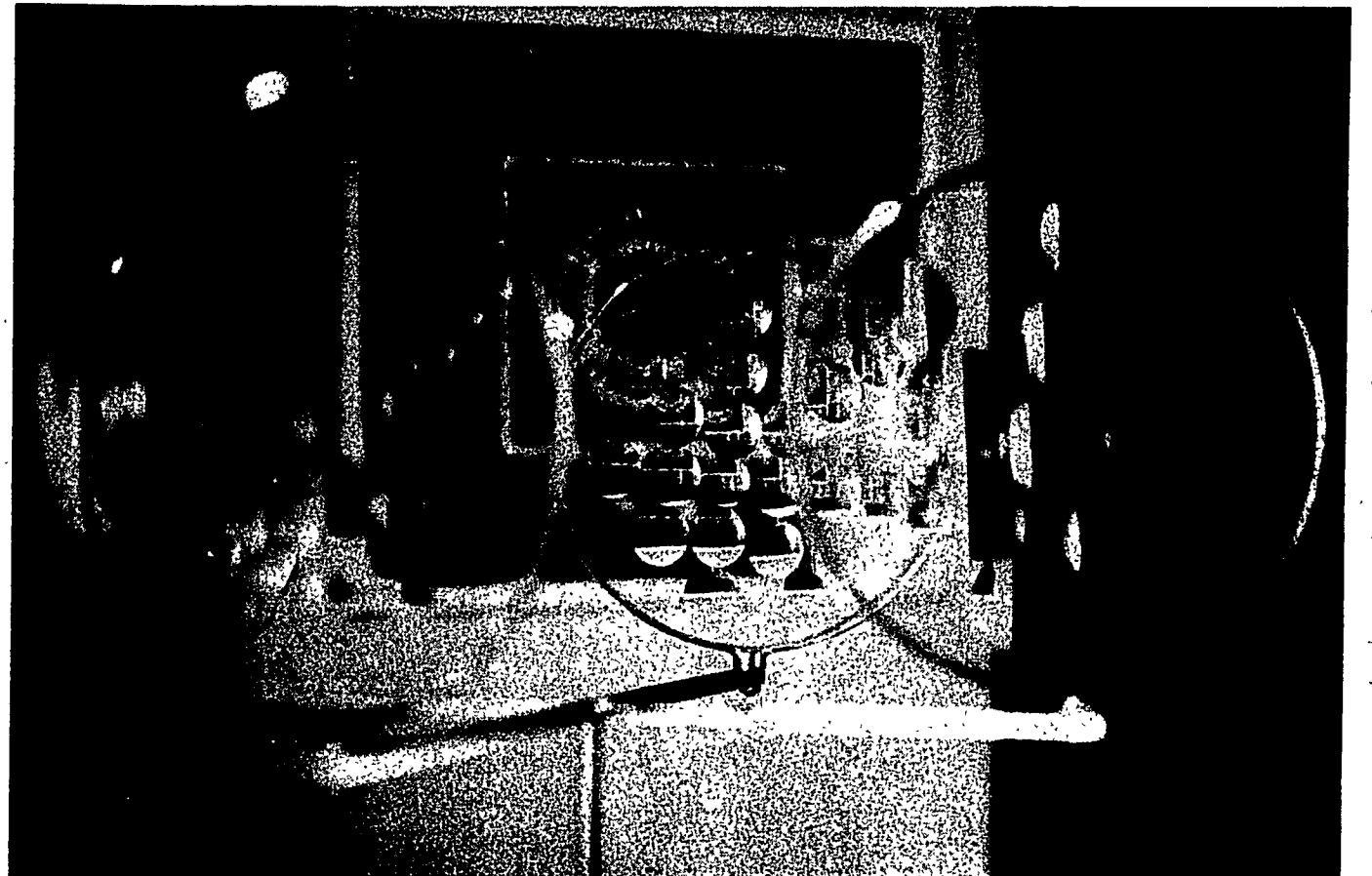


Photo by Andy Gumberg

On the left is "Gemini," by Barbara Hopworth, a glass sculpture featured in the Materials Research Lab's art room. It is a replica of a prize given to an outstanding material scientist

in past years. Above is "The Dawn," by Feliciano Bejar, also featured in the exhibit. It consists of four glass disks with many minor lenses set within them.