

Should We Use **ANIMALS** *in Adventist Schools?*

BY DAVID EKKENS

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I am calling to find out something directly from you,” the voice said over the phone. “Is it true that you require the students in your mammalogy class to annihilate animals?”

“Well,” I said, pausing to consider how to deal with the caller’s word choice, “I do suggest that they trap rats and mice.”

“I think it is terrible that my son is being required by a Seventh-day Adventist college to kill animals,” the woman continued. “We have tried to teach him to rescue injured animals, and now you are telling him to kill them. Why don’t you request more money for lab supplies and buy dead rats for the students to skin?”

I explained the purpose of the collection. “Haven’t you ever set a trap for a mouse that was eating your food?” I asked her.

* * *

“Do you remember me?” another voice asked. The person standing in front of me looked vaguely familiar. “I was in your biology class at Cedar Lake Academy the first year you taught,” he reminded me. “Now I am a physician at our SDA hospital in Hong Kong. I just wanted to thank you for

getting me interested in biology. I first became interested in biology in your class when we dissected animals.”

Same teacher. Two different reactions to using animals in the classroom. How should Adventist schools treat this sensitive subject? What attitude should administrators take about animal use in schools? Should we (or should we not) use animals in SDA schools as we try to teach reverence for life?

According to the Bible, there are many differences between humans and other animals (see sidebar at right). The Scriptures provide many examples of human use of animals.¹ Based on biblical examples and principles, we can conclude that some use of animals by humans is acceptable. Since Adventists do not believe that animals have “souls,” most church members would not accord

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animals equal “rights” with humans any more than they would hold animals morally responsible for murder.

In this article we will examine why and how animals are used in SDA schools and some of the ethical issues involved.

Why Use Animals?

Why use animals at all? Couldn't students learn similar things from computer

simulations, video recordings, and models instead of real animals? Teachers do use models and simulations as much as possible. Recent developments in electronics have produced workable alternatives to dissection. A very promising one is interactive videodisc technology (IVD). As the name suggests, IVD allows input from the student to influence the outcome of the exercise. Studies suggest that IVD may teach many details

of animal anatomy just as effectively as does actual dissection and should be seriously considered by teachers.² However, finances will prevent many schools from using IVD extensively. While a college may get enough money to run an IVD program on one machine, it is highly unlikely that enough machines could be purchased to serve a class of

Bible Texts Relating to Animals and Humans³

“For thou hast made him [human beings] a little lower than the angels, and hast crowned him with glory and honor” (Psalm 8:5).

“And God said, ‘Let the earth bring forth the living creature after his kind, cattle, and creeping thing, and beast of the earth after his kind:’ and it was so” (Genesis 1:24).

“And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul” (Genesis 2:7).

“...in his own image, in the image of God created he him; male and female created he them” (Genesis 1:27).

“And God said unto them, ‘...and have dominion over the fish of the sea, and over the fowl of the air, and over every living creature that moveth upon the earth’” (Genesis 1:28).

“And if his offering be of the flocks, namely, of the sheep, or of the goats, for a burnt sacrifice; he shall bring it a male without blemish. And he shall kill it on the side of the altar northward before the Lord” (Leviticus 1:10, 11).

“What man shall there be among you, that shall have one sheep, and if it fall into a pit on the Sabbath day, will he not lay hold on it, and lift it out? How much then is a man better than a sheep?” (Matthew 12:11, 12).

“Are not two sparrows sold for a farthing? and one of them shall not fall on the ground without your Father. . .ye are of more value than many sparrows” (Matthew 10:29, 31).

“His tender mercies are over all his works” (Psalm 145:9).

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Some Alternatives to Dissection

1. Creating sectional drawings (anatomy classes). The student can make a series of anatomical drawings showing the way the body would look if sectioned, using a cross, sagittal, or coronal section.
2. Making a photographic collection of insects or other animals.
3. Livetrapping an animal and keeping it for observation. The student should care for the animal and learn its habits, natural foods, activity patterns, and behavior, then write a paper about the project and release the animal at the end of the study.
4. Building a model of some biological structure. This can be done with plastic, styrofoam, paper, or other materials.
5. Establishing a tissue culture and doing experiments on the tissue.
6. Using an interactive videodisc program to do a dissection, then taking a test over the material.

150 or 200 anatomy students. Such alternatives to dissection may allow schools to reduce (but not totally eliminate) their use of animals.

However, no matter how good the model or simulation, students do not gain a "feel" for the real thing from a model. Too much in our world is synthetic and plastic. We need to make living things real. At Kettering College of Medical Arts in Ohio my students used human cadavers to study anatomy. When I showed them the reproductive organs in one cadaver, a woman exclaimed, "I didn't realize the uterus was that small!" even though she had seen it in the model.

No computer can simulate an unknown, complex response, such as how kidneys will respond to a new drug. In this area, simulations have limited value.

Imagine that you need bypass surgery. Here is Dr. Apple. He has never performed this operation on a living human but has done the procedure 100 times using a computer simulation. Dr. Bapple has never done the operation on a live person, either. But he has done it several times on living dogs and many times on a human cadaver. Who would you want to do the surgery on you?

In my Animal Physiology class I use living frog hearts and muscles because the principles and actions I want students to observe cannot be seen in models. A computer simulation is like a book—it tells you what *should* happen. In the lab students need to see what *actually* happens.

One of the most interesting experiments in my Animal Physiology class was a study of exercise and weight gain. The rats were not harmed, and we learned some interesting things. This experiment would have been impossible in a computer simulation, which requires the computer to be programmed with all possible outcomes.

But what if a student objects to using animals? A good teacher will always provide alternatives for such students. Some states now have laws exempting students from doing dissections and/or regulating the kinds of animals to be used.⁴ The sidebar at the left gives some suggested alternatives. Obviously, not all of these are appropriate for every class, but they do suggest some possibilities. Others can be developed as well.

Putting Animal Use in Perspective

Before we look at ways animals are used in Adventist schools, we need to put such use into perspective by comparing this use with other ways animals are used by humans (see sidebar on page 29). Almost 98 percent of the animals killed by humans in North America every year are used as food. This does not excuse killing or cruelty to any animal in a school setting. But what animal-rights groups spend most of their money and energy fighting (animal use in schools, research, and testing) represents less than 2 percent of overall use. A recent survey of 21 books supporting animal rights revealed that, out of 1,679 pages discussing the use of animals by humans, 1,064 (63 percent) dealt with use of animals in research, testing, and education. Only 514 pages attacked the use of animals for food.⁵ Most animal-rights activists know they can never get Americans to give up eating meat, but they can get people very upset by making allegations about cruel experiments and unnecessary tests by telling sensational stories and showing ghastly pictures.

Animal Use in Elementary and Secondary Schools

In schools below the college level, animals are generally used in two ways: Preserved animals are used for dissection, while living creatures are used to spark student interest in nature and living things. No earthshaking discoveries are expected at the elementary classroom fish tank, but its presence in a classroom can be an important asset. Not many people would complain about this use of animals—they are living in a near-natural environment.

Charles Robertson, biology teacher at Collegedale Academy in Tennessee, says, “I like to keep a terrarium and aquarium in the classroom so I can have a living specimen of the current animal we are studying. When the students can see a live crayfish, it makes the book study of the animal much more interesting.”

Science fair projects that use live animals should be carefully scrutinized. A temporary animal-care committee may need to be established before the experiment begins to monitor animal use. This committee should include a veterinarian and one other person not employed by the school. No student should be allowed to do a science fair project or demonstration in which the animals suffer pain or are harmed in any way.

Dissection is controversial because the animals have obviously been killed for this purpose. The teacher, then, carries a tremendous responsibility to see that the dissection provides a good learning experience. If the teacher has a positive, reverent attitude, the students can learn a lot about animal anatomy and appreciation for life.

Carl Swafford, a former teacher at Spalding Elementary School in Tennessee, says, “I feel the key is to teach the students we are ‘fearfully and wonderfully made.’ You can’t get that from a computer screen. I used frog dissection for 17 years in seventh grade at Spalding Elementary School. During that time I did not have any major complaints from parents or students. My philosophy is: Don’t do dissection unless you’re going to use it for longer than five minutes. We spent four

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weeks on the frogs.”

Sometimes, to get the students to realize the complexity of a living organism, he would challenge them: “Now, put it back together.” Swafford believes that plastic models are useful for learning facts but that real animals are necessary to teach the awesome nature of living things. “Kids today have a lot more facts about biology than their parents

did, but they haven’t experienced it. They are saturated with nature TV and videos. What they lack is the hands-on experience.”

For his lower grades, Carl has invited a doctor to come to class and dissect a fresh cow heart, cow eye, or human brain. The children are fascinated. The doctor can reinforce the “fearfully and wonderfully made” theme and also weave in practical lessons.

College and University Use of Animals

Since colleges and universities have a broader range of classes than do secondary schools, a wider range of animals are used (see sidebar on page 30). Usually, a higher degree of understanding is expected in college than in high school, so more dissections will need to be done.

Use of animals in these settings generally falls into one of two categories, direct educational use or testing/research.

First, a distinction between testing and research may be helpful. Testing usually refers to studies that determine the safety of products used by humans,

Number of Animals Killed by Humans in the U.S. Per Year

Purpose	Number in millions	Percent
Meat (excluding commercial fishing)	4,285	97.8
Research, Testing, Education	60	1.4
Euthanized in Pounds	13	0.3
Pelts	25	0.6
Hunting, Fishing	?	
Total	4,383	

Sources: Unpublished data compiled from various sources by People for Ethical Treatment of Animals, 1992. Data on pelts from Merritt Clifton, *North American Fur Sources: A Trade in the 1980s*; The Humane Society of the U.S., 1988.

Note: The meat includes primarily cattle, sheep, hogs, chickens, and turkeys. About 90 percent of animals used in research are rats and mice. Roger Nassar and John Fluke (American Humane Animal Shelter Reporting Study: 1988) say that the number of dogs and cats killed in pounds in 1988 was 10 to 16 million. Approximately two-thirds of the dogs and virtually all of the cats used in research are obtained from pounds. Only about 2 percent of the cats and dogs in pounds are used in research—21 percent are reclaimed or adopted; the rest are killed.

such as cosmetics and cleaners. However, it may also include testing of experimental drugs. Research generally means observation of and experimentation on animals in order to understand their behavior, physiology, or other aspects of their biology. This may include the testing of experimental drugs or treatments to determine their effectiveness.

Direct educational use of animals includes studies of live animals, dissections (discussed above), and student collections.

Studies of Live Animals

Living animals are often studied in physiology, natural history, and behavioral science classes. Henry Zuill, of Union College in Nebraska, says that he uses a few live frogs for physiology experiments. In many cases, these animals are not harmed. After the experiments, they are returned to cages or released into the wild. Most teachers who use live animals are careful to treat them with care—a healthy, unstressed animal functions best in an experiment.

In some cases, the nature of the experiment requires that the animal be killed. If so, this should be done in a quick, humane way. When part of a living animal is needed for a demonstra-

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herpetology and mammalogy students. For his mammalogy class, Leonard Brand of Loma Linda University in California asks the students to prepare one mammal skin for study, but makes exceptions for students who feel they cannot do this. Dr. Asa Thoresen (formerly at Andrews University in Michigan) required the students to do a few specimens but provided the animals for them.

Why require student collections? Students thus learn a lot about the animal's habits and biology that they cannot

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How Animals Are Used in SDA Colleges and Universities

1. Dissection: Cats, rats, insects, frogs, fetal pigs. Cats should be purchased from a supplier that obtains them from pounds.

2. Living animal studies (physiology or behavior experiments): Rats, mice, frogs, snakes, insects, and fish.

3. Faculty/student research: Rats, mice, rabbits, birds, frogs, lizards, and snakes as well as invertebrates such as mollusks and insects. Rats and mice make up the vast majority of these.

4. Student collections: Insects, small mammals, amphibians, reptiles.

tion, teachers should always anesthetize the animal before beginning the operation. Prevention of cruelty to the animal should be a primary concern.

Student Collections

This use of animals is usually a minor one but may trigger the bulk of complaints from parents and/or students. If it bothers them, as it did the mother of my mammalogy student, even the college president may get a phone call.

Vertebrates are primarily collected by

learn any other way. In preparing the skin, the student sees and feels anatomical details that are not learned from models.

In entomology, I require students to make a collection because only by identifying actual insects can they learn how complex insects are, how truly wonderfully they are made, and what a huge variety God created. It's one thing to be told that caddisfly immatures build cases to live in. It's completely different to wade into a stream, turn over a rock and

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see a creature that looks like a snail with jointed legs walking across the surface of the rock.

Faculty and Student Research

More college teachers are involved with research today than a few years ago. Many of the animals they use in research suffer no harm. In other cases, the animals are observed under experimental conditions but must be killed at the end of the experiment.

Why should Adventist teachers be involved in research? Bill Hayes, of Southern College, believes that this encourages students to pursue research on their own. Jack Stout, chair of the Andrews University Biology Department, sees research as very important, not only in terms of keeping the individual teacher active in his or her field but also for students. With a background of good research training, Adventist students have been accepted into doctoral programs at prestigious institutions.

Most SDA teachers recognize the possible negative impact that their research may have on their constituency. Most take appropriate steps to ensure high quality, humane care for the animals they use. The Animal Welfare Act of 1966 (and amendments to it in 1985)

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controls use of research animals in the United States. Educators should be aware of these regulations.

Principles to Guide Animal Use in Colleges⁶

1. Establish an Animal Care and Use

Committee (ACUC) and adopt some animal-care guidelines (see sidebar below). The committee should periodically evaluate all use of animals for dissection, approve all experiments involving animals, inspect animal-care facilities, and monitor compliance with the animal-use guidelines. For approval, an experiment should be judged on the following criteria:

- a. Does it have a clearly stated purpose?
- b. How necessary is the experi-

Animal Care and Use Guidelines

The following guidelines may be appropriate for use in SDA colleges and universities:

1. Animals for dissection will be procured from reputable sources that kill the animals in a humane manner and use pound animals, as far as possible.

2. All animals, dead and alive, will be treated with respect. When we are finished with them, all animal parts will be disposed of in a proper manner.

3. Animals to be killed for collections will be killed as quickly as possible and in a humane manner (for example, cervical dislocation or nitrogen fixation).

4. Live animals will be housed in adequate cages and provided with abundant clean bedding, food, and water.

5. Unnecessary stress will be eliminated by appropriate use of anesthetics.

6. Human caregivers and experimenters will be protected from disease or injury by appropriate safety equipment and clothing.

7. All students involved in caring for or using animals in experiments will be instructed in proper care and management of animals and experimental procedures.

8. Records will be kept showing when each animal or cage was cleaned and supplied with fresh food and water.

ment? What justification is there for it? Does it replicate other work?

c. Could an alternative method be used to obtain the same information?

d. Are adequate pain-control measures being used? If not, does the value of the experiment warrant the anticipated level of pain?

2. Post the animal-care guidelines in every lab where animals are used and make them available to anyone who asks about the use of animals in the school. Make sure all persons who deal with animals understand that they must follow the guidelines. Violators should be dealt with by the committee.

3. Photocopy articles dealing with ethical issues such as care of animals, euthanasia, and pain prevention and management.⁷ Ask each researcher and animal caretaker to read them.

4. Establish (and follow) clearly stated policies on training of animal caretakers. These should include cage cleaning, feeding, and watering.

Suggestions for Administrators

If animals are to be used in the school, the administration should be aware of it. Teachers should not use animals without the knowledge and support of the administrators, who have to take the flack from the public when it comes. Presidents, principals, and deans should visit the biology/science/psychology/behavioral science departments and become acquainted with what animals are being used and in what ways. At least one administrator should be a member of the ACUC and attend the meetings.

One member of administration should be appointed as the spokesperson on animal use. All questions can then be directed to that person, assuring that

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cruelty, while using them to benefit humankind.

Each school needs to carefully evaluate the use of animals in its educational program. This issue concerns our stewardship of God's creation. This puts a great responsibility on us to protect animals in our care and use them only for the glory of God and the benefit of our fellow human beings. ✍

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Living animals are often studied in physiology, natural history, and behavioral science classes.

facts will be presented and that a clear message can be disseminated to the public. A prepared statement should be available to give to the press or other interested parties. This statement could include a summary of animal usage in the school and the rationale behind each use.

Summary

The most defensible position appears to be one of responsible use of animals: giving them good care and preventing

NOTES AND REFERENCES

1. This is the first of two papers in a series on animal use. The second paper (in preparation for publication in *College and University Dialogue*) deals with differences between humans and animals.

2. Richard Strauss and Mable B. Kinzie, "Hi-Tech Alternatives to Dissection," *The American Biology Teacher* 53:3 (March 1991), pp. 154-158.

3. Bible texts are taken from the King James Version.

4. Strauss and Kinzie, p. 155.

5. Adrian R. Morrison, "What's Wrong With Animal Rights," *Education Digest* 57:9 (May 1992), pp. 57-60.

6. Snyder, et al. (1992) suggest a similar approach for non-college level schools. Margaret Snyder, Nadine Hilton, J. Frederick Cornhill, and Ronald St. Pierre, "Dissecting Student Objections," *Science Teacher* 59:7 (October 1992), pp. 40-43.

7. Examples are Committee on Care and Use of Laboratory Animals, National Research Council, *Guide for the Care and Use of Laboratory Animals* (Bethesda, Md.: National Institutes of Health, 1985, Publication 86-23), 83 pp.; Panel on Euthanasia, American Veterinary Medical Association, "Report of the Panel on Euthanasia," *Journal of American Veterinary Medical Association* 188 (February 1986), pp. 253-268; M. S. Dawkins and M. Gosling, eds., *Ethics in Research on Animal Behavior* (London: Academic Press, n.d.), 64 pp. This booklet contains reprints of eight papers, most of which originally appeared in *Animal Behaviour* (1982 to 1991).