

Letters

QUESTIONABLE ADVICE

The October article "Observing the Events of Mammalian Development with Mice," by M. H. Peaslee and F. A. Einhellig (*ABT* 36[7]:412) describes a useful high-school project that hopefully will encourage students to investigate normal growth of classroom animals. It is disappointing, therefore, that the article includes some erroneous statements and questionable advice.

The authors state that "often litter size [of mice] during suckling is *regulated* [italics mine] by cannibalism." This, in context, reads as if cannibalism normally is to be expected. In fact, cannibalism is abnormal and is a response to a stress situation; it should rarely, if ever, be encountered if the animals are well cared for. Beneficial factors which contribute to successful rearing of small mammals include spacious cages with solid sides and floor (as described by the authors), a quiet, well-ventilated location, and a highly nutritious, well-balanced diet throughout pregnancy and lactation. Common causative factors of cannibalism are lack of privacy and improper handling of animals. Privacy can be ensured by providing a pregnant mouse with adequate nesting material (soft towelling and tissue for shredding, and cotton) and a nesting box (a five-sided inverted cardboard box with an arched doorway cut out is ideal). These simple additions permit expression of normal maternal behavior of building a soft nest in which to hide the pups. Handling the pups must be done with care. The mother is often resentful of human handling, and in general it is best to avoid handling the babies for at least three days after birth. (The lack of growth data for these few days is not critical to the success of the study.) Thereafter, the procedure should be to rub your hands through the bedding to pick up the smell of the mother before handling any pup. If this is not done, human odor will be transferred to the pups and the mother may kill them when they are returned.

Questionable advice is given by Peaslee and Einhellig when they suggest that high-school students add potentially lethal poisons, such as DDT, to the diets of small mammals. The stated intent is to demonstrate deleterious effects on growth and behavior distortions. To my mind, serious problems of humaneness toward the animal, safety for the student, and general ethical justification are raised by encouraging youngsters to feed "stress chemicals" to classroom animals. Of less significance, procedural difficulties (such as selecting the right dose to demonstrate retarded growth rather than death) and poor experimental design (administration of poison is not an ideal method of studying animal behavior) make such projects ill-devised and inadvisable. I

strongly recommend that such projects not be attempted. There are many projects on animal growth and behavior which do not harm the animals and which could be undertaken with greater benefit. References for such projects follow.

- ANON. 1974. Suggestions for experiments involving animals at the preuniversity level. Canadian Council on Animal Care, 151 Slater St., Ottawa, Ontario K1P 3H3.
HAINSWORTH, M.D. 1968. Experiments in animal behavior. Houghton Mifflin Co., Boston. P. 162-172.
STOKES, A. W., ed. 1968. Animal behavior in laboratory and field. W. H. Freeman and Co., San Francisco. See especially Separates number 796, 797, 804, 805 and 827.

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M. H. Peaslee and F. A. Einhellig comment:

We appreciate Dr. Orlans' careful scrutiny of our manuscript; however, we do object to the reference to "erroneous statements" which, according to her own explanation, amount to the inference that "litter size . . . is regulated by cannibalism." It was our intention that students handle and examine closely the developing offspring, and if the result of this invasion of "privacy" of the nursing mouse is the loss of a few pups, so be it. High-school classrooms seldom have the peace, quiet, or tranquility described and we fear that the "five-sided inverted cardboard box" would very quickly be reduced to rubble by the nesting female.

The projects were suggested under the assumption that only responsible students would possess the required dedication and that a close student-teacher relationship would clearly prevail. We find it unfortunate that our critic has raised no objection to the stressful environments surrounding man—excessive intake of tannic acid (found in coffee, tea, or cocoa), imbibition of alcoholic beverages, or recycling of DDT through our food chain—the same "lethal poisons" suggested for use with project mice.

REVIVE AUDIOVISUAL COVERAGE!

I'm concerned that *ABT* might be giving up on "Auditioning Audiovisuals!" I believe the last column appeared in the May 1974 issue, and not very often before that. I consider this column a very valuable source of media reviews for biologists that should appear with much greater frequency in *ABT* (like in every issue). I suggest you publish the annotated list of films given to participants each year at the NABT convention, even without review comments. This

should encourage biology teachers to do a little reviewing on their own. It's an excellent list—as media coordinator of the biology department at Salem College, I make frequent use of it.

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Plans are underway to resume coverage of audiovisuals in ABT. In the meantime, we're pleased to follow your suggestion.—Editor

ACI Films, Great Neck, N.Y. 11020: *City Limits*
Churchill Films, Los Angeles, 90069: *Strip Mine Trip*
Communico Films (address unavailable): *Stream*
Coronet Instructional Films, Chicago 60601: *Adaptation of Birds; Fruit Flies: an Inquiry into Behavior; and The Egg Becomes a Chick*
CRM Educational Films, Del Mar, Calif. 92014: *The Cell: a Functional Structure and Evolution and the Origin of Life*
Dimension Films, Los Angeles 90069: *Buttercup*
Doubleday Multimedia, Santa Ana, Calif. 92706: *Nerve Muscle Preparation and Where the Embryo Grows*
Encyclopedia Britannica Educational Corp., Chicago 60611: *Buffalo: an Ecological Success Story; Cactus; Adaptation for Survival; and The Mayfly: Ecology of an Aquatic Insect*
Harper and Row, New York 10022: *Galapagos: the Experimental Conditions and Redesigning Man: Science and Humanity*
Hartley Production Films, New York 10017: *Darwin Galapagos Today*
International Film Bureau, Chicago 60604: *Waddensea: Bird's Paradise*
Macmillan Films, Mount Vernon, N.Y. 10550: *Oil Sport and Rhythm of Life*
McGraw-Hill Films, New York 10020: *Animals of Africa and Baobab: Portrait of a Tree*
Moody Institute of Science, Whittier, Calif. 90606: *The Human Machine*
National Film Board of Canada, New York 10020: *Beyond the Naked Eye and Keepers of Wildlife*
Oxford Films, New York 10028: *Pond; Swamp; and Desert*
Robert Hartkopf Films (address unavailable): *Cry of the Marsh*
Schloat Productions, Pleasantville, N.Y. 10750: *The Life Cycle of a Flowering Plant*
Windrose-Dumont-Time (address unavailable): *Survival and the Senses; Too Many Elephants; and How Animals Speak*

THE LIFEBOAT ETHIC

● At the 1974 NABT convention Garrett Hardin spoke on the topic "Spaceship versus Lifeboat as Ethical Approaches to Overpopulation." The following is a response to his comments, which have been published in the October 1974 issue of *BioScience* and, in a shorter version, in the September 1974 issue of *Psychology Today*.

There we sat, 1,600 biologists gathered for the annual convention of the National Association of Biology Teachers. The Imperial Room of the Americana Hotel, one of New York City's finest, glowed under a massive chandelier that gave no indication of an energy crisis. October 13th was a somber Sunday, and Garrett Hardin was describing his "lifeboat ethic."

This University of California biologist was telling us that the advanced nations of the world have brought disaster to the poorer nations, that charity, philanthropy, and foreign aid are destructive and stupid. He stressed a point: the more we interfere with the lifestyles of poorer peoples, less "progressed" peoples, the more disturbed become the basic laws of survival that have guided us for centuries.

I agreed with some of his premises, but I felt quite uncomfortable, sitting in such a luxurious ecosystem, at some \$40 a day, most of us stuffed to our ears with New York steaks and brew, insulated in layers and layers of silks, vests, \$20 shirts, and an abundance of adipose tissue. It was downright embarrassing to hear someone tell us that we should not share our goods with the poor of the world. "It is not a feasible policy to say it is our duty to share." Each nation is a lifeboat, he said, and each should seek its own survival at the expense of other lifeboats.

Hardin does have a point. The indiscriminate "aid" to foreign lands by 19th-century Europe and 20th-century America has contributed immensely to the world's population boomerang. We have induced an overproduction of babies and increased their lifespans, while doing little to increase the carrying capacity of the lands they inhabit. He said, "We say that there is a need for more food. We could just as well say that there is a need for fewer people."

If he is correct, one might ask how best to successfully meet the "need for fewer people": by allowing those who are alive to starve to death, or by strongly proposing family planning? It would be most inhuman and arrogant for us to turn our backs on the needy and the dying. We may think we live in an isolated lifeboat, but the oil crisis has shown us that we do not. Nations are not becoming isolated but increasingly interdependent. The lifeboat ethic is an armchair game whose rules are extinct.

We have destroyed the ecostability of many foreign lands, by trying to help them; that may be difficult to deny. But regardless of who is responsible for the world's population dilemma, we now have three choices: (i) let them drown (the lifeboat ethic); (ii) continue our present course of charity, philanthropy, and foreign aid; or (iii) do all we can to create a meaningful existence for every person alive, while initiating massive family-planning programs. I prefer the third, for the other two are (i) inhumane, or (ii) ineffectual.

We may not be able to feed the world, for our food supply is said to be depleting. But can we not stop blacktopping our farmland with interstate highways running parallel to each other, and stripping our forests to assure one-level abodes on two-acre lots for every citizen who manages to escape the metropolis? The citizen is selfish. Hardin calls this selfishness one of the prime reasons why we who are still alive are still alive. But surely our government could call a moratorium on "progress." We could begin to extend lifelines to the other lifeboats, instead of tossing food packages, most of which never reach the intended recipients... for our aim is quite poor. We could begin to build a world community, tying all the lifeboats to-