TUFTS UNIVERSITY SCHOOL OF VETERINARY MEDICINE

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MESSAGE FROM THE DIRECTOR

There have been several estimates of the number of animals handled and euthanatized by shelters and pounds in the United States but all of them have been based on inadequate data. The Humane Society of the United States estimated that between 8 and 10 million dogs and cats were killed in shelters in 1982. The American Humane Association estimated that the numbers were even higher. Both estimates were based on a survey of shelters but neither organization had a reliable estimate of the total number of shelters in the USA or of the size distribution of those shelters.

This summer, Anne Marie Manning, a Tufts student, has been looking at the role of sterilization in controlling dog and cat populations and, as part of the project, obtaining data from New Jersey on their low cost sterilization program for animals owned by persons on some sort of public assistance. As part of the program, New Jersey registered shelters and required them to submit an annual report on the number of animals handled. As a result, we have what is presumably a reasonably accurate record of shelter sizes and animals handled every year.

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STUDENT SUMMER PROJECTS

BREEDING STANDARDS FOR PUREBRED DOGS

Recently, the link between puppy mills (unethically managed dog breeding facilities) and the pet store trade has received much media publicity. Animal rights and animal welfare organizations have made allegations that certain dog breeding facilities, notably in the midwestern U.S.A., practice poor disease control, propogate genetic diseases, fail to provide adequate nutrition and conduct improper breeding. One common allegation is that dogs in puppy mills are bred on the first heat and every heat thereafter which is thought by many to be detrimental to the dam and pups. Pet store chains, such as Doktor Pet, Inc., have been accused by animal activists of purchasing dogs from such breeding farms.

Sarason Leibler, who recently purchased Doktor Pet, Inc., is formulating a certification program for his breeder/suppliers in an attempt to improve his company's public image by supplying better quality pets from reputable sources. During his communications with the Humane Society of the United States (HSUS), Leibler discovered that there appeared to be no definitive data on the effects of breeding a bitch on the first estrus or the ideal breeding frequency thereafter. As a result, he sponsored a literature review by a student at Tufts University School of Veterinary Medicine (TUSVM) to summarize current scientific knowledge on these issues.

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FROM THE DIRECTOR (cont.)

In 1990, 118 New Jersey shelters reported handling 145,711 dogs and cats and euthanatizing 75,263 (51.7%) of them. A mere eight (6.8%) of the shelters accounted for 36% of all the animals handled and a further 20 (16.9%) of the shelters accounted for another 38% of all the animals. Thus, just under one quarter of the shelters were responsible for almost three quarters of all the dogs and cats handled by shelters in New Jersey.

Further inferences are possible. New Jersey accounts for about one thirtieth of the US population of humans. If one were to assume that New Jersey were reasonably representative of US shelter demographics, then one could expect there to be about 3,500 shelters in the US (30 times 118), with about 800 accounting for 75% of all animals handled in the US. Since New Jersey reports handling 145,711 animals in 1990, one might also infer that across the USA, a total of 4.4 million dogs and cats were handled by shelters and about 2.3 million were euthanatized. These extrapolated figures are far below the figure of 10-15 million euthanatized dogs and cats that is normally quoted in the literature. As a result, one must be skeptical. However, an MSPCA survey of animals handled in Massachusetts suggests that there are about 150,000 dogs and cats handled (and about 50% of these euthanatized) annually by shelters and the 351 animal control programs in Massachusetts' towns. Massachusetts accounts for one fortieth of the US human population so one could infer that, nationwide, about 6 million dogs and cats are processed by shelters with about 3 million killed.

Other surveys and studies that we have done at the Center for Animals & Public Policy lead us to believe that owners in the Northeast tend to spend more on veterinary care than in other parts of the country (especially the South and the Rocky Mountain states). As a result, it could be argued that extrapolating from both Massachusetts and New Jersey would result in a low estimate of US shelter populations. However, even given the need to adjust the figures a little (say by as much as 33%) still leads to a far lower estimate of total shelter population than the popular dogma of the day. It may also be true that New Jersey shelters do not report accurate figures or that not all shelters register although it is likely that only small shelter operations escape the regulatory net and, as we have seen, the small shelter does not make much of contribution to the overall total shelter population.

The preliminary data that we have collected from New Jersey and Massachusetts indicates that the shelter population may be considerably inflated. The inferences we have drawn are a challenge to the shelter community to do a better job of estimating the national shelter population. If a few more states representing different areas of the country could make reasonably accurate estimates of their state shelter population, then we could make our extraploated estimates more robust and less susceptible to criticism.

Finally, even if the number of dogs and cats killed annually is only 3 million, this is still a lot of animals and we can certainly do a better job of reducing it further. Anne Marie Manning has been looking at sterilization status and owner attitudes and has data that could help to focus attention on problem areas in the dog and cat population. For example, she has obtained evidence that sterilized females are almost as productive (in terms of litters produced before they are sterilized) as are intact females.

For eight years, I have been calling on the shelter community to be more deliberate in collecting data that can be used to assess problem areas and evaluate new programs. The above figures merely add grist to the mill and re-emphasize how important it is to spend more time on data collection and analysis.

Andrew N. Rowan

BREEDING PUREBRED DOGS (cont.)

The third year student, Russell Siegel, under the supervision of Dr. Andrew Rowan, Director of the Center for Animals & Public Policy at TUSVM, reviewed the lay literature on dog breeding and conducted interviews with veterinarians, dog breeders and others involved in canine reproduction. Based on this information, he compiled lists of reasons for breeding or not breeding on the first estrus and recommendations for the ideal breeding frequency. An extensive review of the available literature was then undertaken to gather all scientific data relating to the list of recommendations. Major dog food companies were also contacted to obtain unpublished data on these issues.

Surprisingly, little "hard" data is available on these very basic questions of canine breeding management. Little or no data has been gathered on such issues as

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maternal behavior, dystocia rates, and growth in bitches bred on the first estrus.

The majority of published canine production data is on laboratory beagles that are often bred on the first heat and every heat thereafter, apparently without detrimental effect. This data indicates that beagles, bred on the first heat, have a high number of pups with low neonatal mortality while displaying few associated health problems. Nutrition should be adequate to maintain continued growth of the dam through gestation and lactation. (Extra care must be taken with other breeds that reach puberty at a lower percentage of adult weight.) Studies on beagles also suggest that breeding on every heat is not associated with significant problems unless the interval between estrus cycles is less than 4.5 to 5 months. Therefore, it appears that if beagle bitches are kept on a high plane of nutrition and if one accepts a low conception rate, there are no explicit problems associated with breeding on the first heat and every heat thereafter.

> **"... Surprisingly, little 'hard' data is available on these very basic questions of canine breeding management."**
>
> *(Russell Siegel, Center for Animals)*

However, the scientific data that does exist, clashes with the conventional wisdom of most veterinarians and respected dog breeders. Some canine nutritionists now suspect that beagles have higher reproductive performance and lower nutritional requirements than other breeds of comparable size. Most breeders with whom the Tufts investigator spoke had little or no personal experience breeding on the first heat or every heat thereafter but the reasons they gave for such decisions were not scientifically substantiated. Some canine theriogenologists and nutritionists echoed the opinions of breeders on the basis that, given a lack of scientific data on the subject, one should not push bitches to their reproductive limit to avoid doing harm. The conclusion that can be drawn from this is that certain dog breeding practices are based on unexamined tradition or undocumented fact. It is hoped that additional scientific research will answer the many questions unearthed by this study.

WILD HORSE PROJECT

Two students, supported by a grant from an interested private donor, spent the summer investigating the controversy surrounding the wild horses in the Pryor Mountain Wild Horse Range on the border between Wyoming and Montana.

In the last fifteen years, Bighorn sheep have been reintroduced onto the range and their numbers have expanded rapidly to about 100 head. The sheep are reported to compete with the horses for resources, and thus, concern has been expressed over the growing problem posed by the sheep. While there is no plan to manage the sheep, horse numbers have been controlled at just over one hundred animals for the past two decades by the Federal Bureau of Land Management. This program has been the focus of much protest over the past years. Locally, the Pryor Mountain Wild Horse Association has expressed concern and the American Horse Protection Association has lobbied on behalf of the wild horses in Washington.

The students are currently preparing a report of their findings, based on an extensive review of the literature, interviews with protagonists from both sides, and a visit to the range itself.

CENTER SPONSORS CURRICULUM WORKSHOP

In conjunction with the development of a national curriculum on "Animals in Society," Tufts Center for Animals & Public Policy sponsored a workshop August 5-9 to review completed sections of the proposed curriculum and to discuss related curricular issues.

The three-year curriculum project, funded by the Pew Family Trusts of Philadelphia and coordinated by Joan Weer, involves the development of text and visual aids on topics such as the human-animal bond, euthanasia and pet loss issues, the history of the animal protection movement, research animal issues, animal rearing practices, and wildlife and endangered species issues. The curriculum and visual aids will be available free of charge to all North American veterinary schools and serve as a primary resource for seminars and workshops conducted by Tufts for private and public institutions.

Representatives from sixteen U.S. veterinary schools and one Canadian school attended the meeting held on

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the Tufts Medford campus. In addition to a review and critique of the completed sections of the curriculum and a review of the existing programs at each participating school, attendees heard presentations from experts in the fields of veterinary ethics, curriculum evaluation techniques, social sciences in the veterinary curriculum, euthanasia issues and pet loss counseling. (Synopses of several of the presentations are included below.) A plan for the development of graduate, clinical and continuing education programs based on the curriculum was also discussed in depth.

In addition to the campus classroom sessions, participants spent an afternoon touring the Tufts Veterinary school in N. Grafton followed by a dinner on the campus and enjoyed an evening at Woodman's Lobster House in Essex.

ETHICS IN VETERINARY SCHOOL CURRICULUM

Dr. Jerrold Tannenbaum of the Tufts University School of Veterinary Medicine, discussed ethics and values in veterinary medicine and veterinary school curriculum.

"Although there appears to be growing practitioner dissatisfaction with their training in ethics decision-making, there still remains substantial resistance to the teaching of ethics in veterinary schools."

(Dr. Jerrold Tannenbaum, Tufts University School of Veterinary Medicine)

He stated that the primary focus of the curriculum in veterinary ethics has traditionally been on ethical issues in relation to private practice. Reflected are the major concerns of practitioners such as malpractice issues, intra-professional relations, commercial activities, fees, employee relations, practice management, euthanasia issues and concerns over animal rights activists. Although there appears to be growing practitioner dissatisfaction with their training in ethics decision-making, there still remains substantial resistance to the teaching of ethics in veterinary schools. Statements such as "It's easy to tell right from wrong" and "Ethics can't be taught as they are subjective and non-scientific" are frequently heard. Dr. Tannenbaum outlined effective and logical rationale and responses appropriate for rebuttal to such statements.

Five important facts regarding veterinary ethics were stressed:

1. Veterinary ethics is a distinct field of study with its own concepts, principles and problems.
2. Veterinary ethics must attempt to be structured, systematic, utilize concepts of moral theory and seek general principles while retaining its attentions to specific issues.
3. Veterinary ethics seeks to question those tenets not normally questioned resulting in the modification of a position or the strengthening and deepening of an already-held position.
4. Veterinary ethics requires sustained attention by all veterinarians as others will attempt to resolve the issues if veterinarians do not.
5. Veterinary ethics cannot be the province of veterinarians alone. It must include the opinions of those with an "outside" view.

Dr. Tannenbaum concluded this section with specific suggestions regarding instruction in veterinary medicine. He stated that the study of ethics should ideally exist in a curriculum on its own and not be a part of another course such as client relations. It should be required of all students, be a formally structured, introductory course (hopefully enhanced by clinical experiences) and should involve the substantial participation of a philosopher or ethicist.

SOCIAL SCIENCES IN VETERINARY MEDICINE

Dr. Elizabeth Lawrence, Tufts University School of Veterinary Medicine faculty member, emphasized the need for the social sciences as a "humanizing element" in a veterinary curriculum. She stressed that an understanding of animal domestication, a very complex process, is necessary for a thorough understanding of the biological and cultural aspects of veterinary medicine. If one does not understand the normal, natural behavior of an animal, developed over thousands of years, one cannot diagnose correctly abnormal animal behavior nor understand the varying degrees of animal dependency on humans. In addition, a knowl-

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edge of changing social attitudes is relevant to understanding certain animal diseases and physical conditions, especially those conditions caused by human interference.

As society perceives the veterinarian as playing a mediating role between people and animals, it is advisable for veterinarians to seek the information offered by the various social science disciplines, especially as it appears that many complex issues are now being left to the social scientists such as analysis of the human-animal bond theories, the defining of the veterinarian's role in the preserving of nature, and the addressing of the true nature of scientific inquiry. For example, the different divisions of anthropology can provide a key to better understanding the delineation between humans and animals, and the fields of sociology can help explain culturally-influenced attitudes, lifestyle differences, and religious traditions. As the world "grows" smaller, a cross-cultural understanding of human-animal relationships is mandatory.

"If one does not understand the normal, natural behavior of an animal, developed over thousands of years, one cannot diagnose correctly abnormal animal behavior nor understand the varying degrees of animal dependency on humans."
(Dr. Elizabeth Lawrence,
Tufts University School of Veterinary Medicine)

She also observed that veterinary medicine has always sought a higher social status. In order to gain this increased respect, veterinarians must become more knowledgeable about the history of their profession, refrain from evaluating themselves as "second best" to physicians, and become more willing to learn from other disciplines.

LABORATORY ANIMAL ISSUES

Dr. Arnold Arluke, associate professor of sociology and anthropology at Boston's Northeastern University, presented to the group data from the research in which he has been involved for the last six years - a study of coping behaviors among laboratory workers. His extensive research in 26 laboratories has revealed four main areas of concern for animal workers regarding the animals they tend. The first of these has to do with the issue of euthanasia procedures. Dr. Arluke found that the degree of employee stress is often related to the method of euthanasia, the staff attitude toward the procedure, the species involved, the frequency of occurrence and the coping behaviors "allowed" for staff members.

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(Dr. Arnold Arluke,
Northeastern University)

A second concern involves the workers' recognition of the continuous possibility of their becoming attached to various lab animals only to have these bonds or attachments result in emotional distress when the animal is transferred, subjected to stressful/painful procedures, or killed. (Therefore, many workers learn to objectify the animals with which they work.)

A third issue relates to questions and reservations the workers have regarding the activities in which they're involved. The questions can be fairly abstract reflecting general moral dilemmas regarding the killing of animals for human use or man's right to kill certain species. Other concerns can be more specific such as questioning experimental designs, the number of animals used in specific procedures, or the expertise of the investigators.

A fourth concern reflects many worker's hesitancy to discuss their concerned and confused feelings with anyone who can institute changes for fear of "making waves." In contrast, the perception that they are often considered in a less than favorable light by much of society results in their feeling forced, when outside the lab, to never project an ambivalent attitude toward their job in order to avoid appearing vulnerable.

REVIEW OF SURVEY DATA

Dr. Rowan presented data results from two surveys conducted by the Center in early 1991. One survey involved the sending of questionnaires to 500 randomly selected veterinary practitioners across the United States. For the second survey, questionnaires were mailed to 480 veterinary students, 60 to each of eight schools. The design of the questionnaire allowed the investigators to not only compile data for each population but to compare the data results of the two populations.

One section of the survey asked that the subject rank on a scale of one to six the importance of various topics in the veterinary curriculum. (Not all of the traditional veterinary courses were included on the list.) Both practitioners and students felt pharmacology, practice ethics, animal behavior (clinical) and writing and speaking skills were very important. The courses ranked next in value by both groups included genetics, biotechnology, epidemiology, computer skills, the human-animal bond, environmental issues, marketing and business, and changes in contemporary veterinary practices. Students also placed in this ranking courses dealing with controversial topics such as animal research, farm animals and wildlife issues while practitioners did not. Both groups placed on the unimportant end of the scale courses on the history of veterinary medicine, animal symbols, animals and religion and horses in American history and society. A factor analysis for this section was also completed based on the data results from each group which revealed clusters of similarly ranked courses.

The surveys revealed that for both groups, veterinary literature is the number one source of information on "animals in society" issues with animal rights literature being the least important.

In regard to the person or institution that was most important in instilling values regarding animals during their schooling, both practitioners and students rated "experience with an animal" as the highest. The "environment in which raised" was second highest for both groups.

Information was gathered from a question that required the subject to identify the extent to which his/her interest in pursuing a veterinary career is motivated by a desire to serve human welfare or the animal patient. On a scale of one (serving human welfare) to ten (serving animal welfare), the practitioners' mean score was 6.81 while the mean score for students was 7.17. When responses from the eight schools were compared, no significant differences were revealed. The same held true when comparing the means of the different years in school (first through fourth year students). However, the difference between males and females was significant with females averaging 7.56 and males averaging 6.53. A significant difference was also revealed between students from rural areas (6.52) and those from both suburban (7.31) and urban areas (7.69). The same type of results appears to be true for the practitioners. However, the practitioner sample size was not large enough to produce any statistically significant differences.

From a ten question section (asked of students only) that surveyed attitudes on specific issues, three general attitudes were revealed:

1. Animals have a moral claim on humans but not so strong as to prohibit animal use in research.
2. Animals have some needs that must be respected; the ability to move freely and engage in intraspecies socialization is one of those needs.
3. Animals may be killed but not without reason. Those that suffer deserve the attention of veterinarians.

SEMINAR ON TEMPERAMENT TESTING/ATTITUDES TO ANIMAL USE

On June 19, 1991, Tufts Center for Animals and Public Policy sponsored a workshop presenting the results of a study conducted jointly by Dr. John Broida, an experimental psychologist at the University of Southern Maine and Robert Kimball, Director of Education, New England Antivivisection Society.

Using a combination of the Meyers-Briggs Personality Inventory (a psychological tool to measure temperament), the Takooshian Scales which measure attitudes toward intrusive studies on animals, empathy toward animals and attitudes toward science, and several other psychological testing instruments, the two men examined student attitudes to animal research, contrasting the personalities of vivisectionists and antivivisectionists, and seeking significant demographic factors.

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TESTING/ATTITUDES TO ANIMALS (cont.)

One thousand forty-eight college students divided among seven campuses were given the inventory/survey. Variables such as age, gender, birth order, and school major, as well as attitudes on death, abortion, empathy toward animals, vegetarianism, ecological concerns and politics were investigated.

Using the Meyers-Briggs Inventory, four personality types were identified at the outset of the study with all the subjects, based on their responses, placed in one of the four categories. The first category, "sensate perceiving," describes persons who act on impulse, feel a freedom to test life's limits, and often "live for the moment." They are usually charming and enthusiastic. Nine percent of the population studied were identified in this group. The second group, "intuitive thinking," describes those who are fascinated with science, strive for competency and seek a power over nature. Nine percent of the population were categorized as this. The "sensate judging" category describes those who strive to preserve society and the social norms. They seek stability and feel a great sense of duty to what they are "supposed to do." Forty-three percent were placed in this group.

The last category, "intuitive feeling," describes those who are concerned with integrity, relationships, truth, and ethics. They desire a personal identity rather than loyalty to a group. Forty percent of the population fell into this category. (According to other studies, the distribution of intuitive feeling and sensate judging temperaments does vary according to college goals and gender with a much higher percentage of college-bound students being categorized as intuitive feeling (45%) than non-college-bound students (8%). Therefore, it must be recognized that the results of this study, based on a college population, would not necessarily correctly represent the general public.)

When comparing the attitudes of the four temperament types towards invasive research, Kimball and Broida found that the only strong association was that intuitive feeling types were twice as likely as the other groups to be strongly opposed to animal research. (However, this group also revealed the widest range on the vivisection attitude scale.) In addition, study data was interpreted by Broida to suggest that those opposed to animal research were also more likely to have a negative attitude toward science. The presentation of this data led to a spirited discussion between Broida, Kimball and participants. Kimball disagreed that an antivivisection stance was necessarily anti-science and noted that it depended on what type of scientific attitude one was measuring. For example, as intuitive feeling persons are usually very creative and strongly interested in knowledge, they may have negative feelings about a reductionist, invasive approach to science but be strongly positive towards a more holistic and societal approach.

It was also suggested that those who expressed strong antipathy to animal research may have had a negative experience. Indeed, the data indicated that students who have had a direct experience with animal research in the course of their education are more likely to be antivivisectionist than those who have not. Additional interpretations revealed that females and those in the social sciences were more antivivisectionist than males and those in the applied sciences, and that there appears to be no correlation between age and vivisectionist attitudes or degree of assertiveness and vivisectionist attitudes. On the animal research scale, there were positive correlations between antivivisection and anti-militarism, ecological concerns, empathy and vegetarianism and negative correlations with argumentativeness, conservatism, religious conservatism and science.

It must be pointed out that all of these analyses are preliminary and that the comments included here are based on a relatively brief discussion of the vast amount of data accumulated. After finalizing the interpretation of the data, Kimball and Broida plan to publish the results.

CENTER WELCOMES NEW STAFF MEMBER

Maria Moalli, DVM, has joined the staff of the Tufts Center for Animals and Public Policy as a coordinator of the Tufts Alternative Project, a three year project aimed at addressing policy issues relating to the development, validation and implementation of alternatives to animals in toxicity testing. She replaces Dr. Karl Andrutis who left the Center in June to enter a training program in laboratory animal medicine at Massachusetts Institute of Technology.

Dr. Moalli will be working at the Center from July, 1991 to January, 1992 to finish up the National Agenda project. She then hopes to enter a laboratory animal medicine residency program.

FUTURE SEMINARS FROM CONTINUING EDUCATION

Twelfth Annual Canine Symposium for Owners and Breeders	Large Animal Practitioners' Conference
Saturday, December 7, 1991 Tufts University School of Veterinary Medicine Administration Building	**Saturday, January 24, 1992** Tufts University School of Veterinary Medicine Administration Building
For registration information, contact Jan Lennon at 508/839-5302 x4705	For registration information, contact Jan Lennon at 508/839-5302 x4705

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